

Volume 3  
Number 6  
November 1990  
£2.95

An Interactive Publication

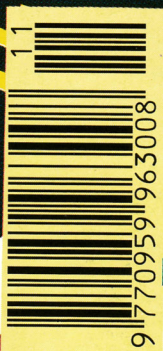
# AMIGA

## COMPUTING

**SAMPLE THE WORLD  
OF AMIGA  
MUSIC**

**NO DISK?**

ASK YOUR  
NEWSAGENT  
FOR ONE NOW !

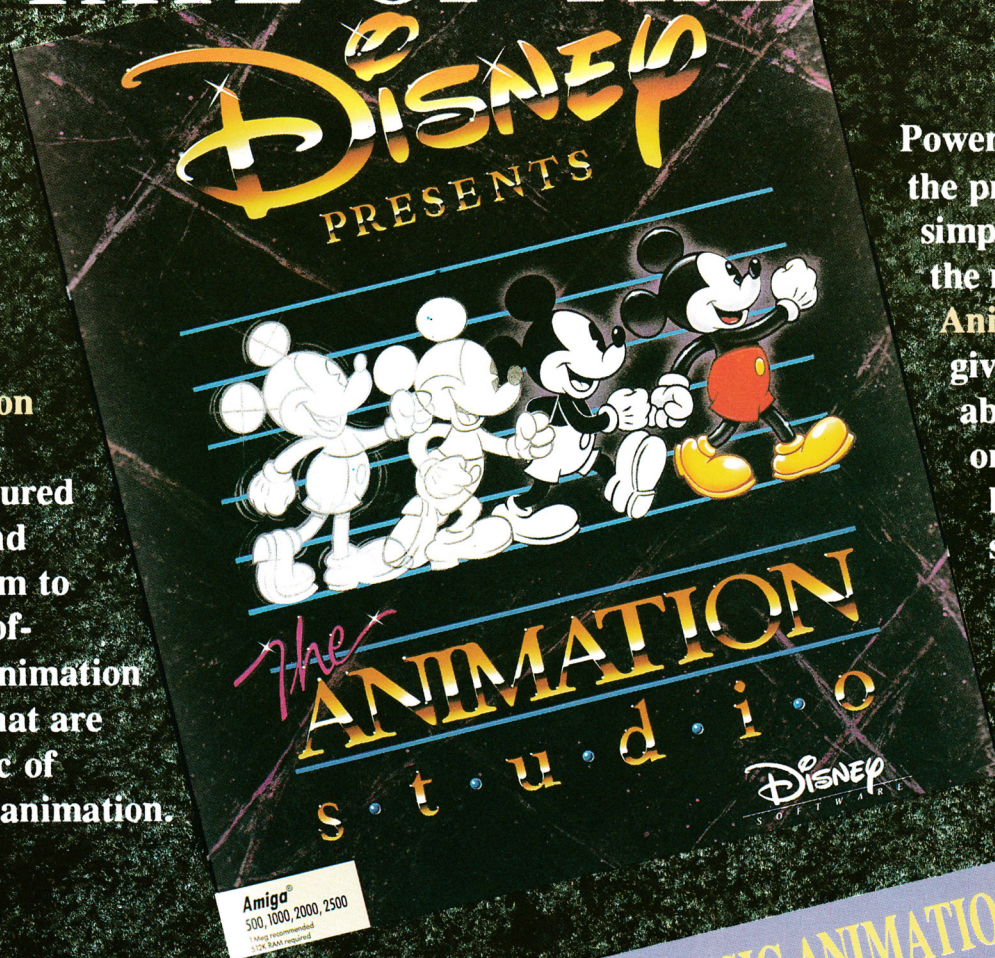


**WIN!.... Name your own prize!**  
**PLUS the latest on Comms, Graphics,**  
**AMOS, Machine code, PD**



# POWERFUL. EASY TO-USE. STATE-OF-THE-ART.

The Animation Studio is the only full-featured animation and paint program to utilise state-of-the-art cell animation techniques that are characteristic of Disney-style animation.



Powerful enough for the professional, yet simple enough for the novice, The Animation Studio gives you the ability to create or enhance full-length animated sequences.

NOW YOU CAN HAVE TOTAL CONTROL OF CLASSIC ANIMATION FEATURES

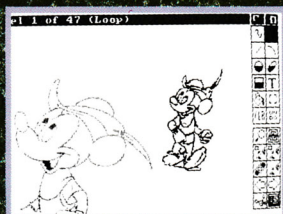
## • Onion Skin:

This exclusive Disney feature lets you produce animations by seeing through three previous cells.

• **Exposure Sheet:** This powerful feature allows you to order the cells any way you want and control the timing of each.

## • Music and Sound

**Effects:** Add sound, music, speech and cartoon special effects to your animations.

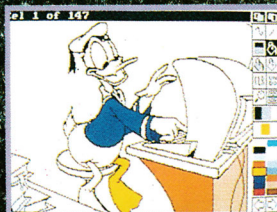


## • Ink & Paint: Bring

colour to your animation. Use the dither option to create more than 4096 colours and superimpose on background pictures!

## • Basic & Advanced Animation

**Techniques:** Learn techniques such as Squash and Stretch, Arc of Motion, Inbetweening and Path of Action. Learn how to go from rough concept to finished animation-complete with colour and sound!

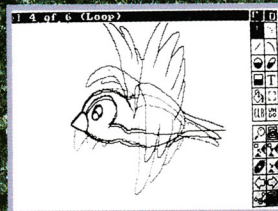


## Includes:

- Sample Disney animations for you to study and modify.
- Actual animations taken from classic Disney films.
- A fully coloured animation prepared with The Animation Studio.
- 2 precise instruction Books

## Available Now:

Amiga® version for all Amiga machines 512K required. 1 meg recommended.



For more information or technical support please call 0268 541 212

Amiga is a trademark of Commodore-Amiga Inc.  
Developed by Silent Software. © The Walt Disney Company.

NATHAN  
SOFTWARE

Disney  
SOFTWARE

Unit 4 Stanretts Laidon North Trade Centre BASILDON ESSEX SS15 6 DJ



# OVERSEAS MEDIA DISTRIBUTORS LTD

OM HOUSE, 139-141 DOMINION ROAD, GLENFIELD, LEICESTER LE3 8JB

TEL: (0533) 313188 FAX: (0533) 873999



OVERSEAS MEDIA DISTRIBUTORS LTD

MINIMUM ORDER VALUE £12.50

## 3 1/2" DISKS

		25	50	100	200
D6010	OMD 3 1/2" DSDD 135TPI	£19.50	£33.50	£59.50	£115.00
D0110	SONY (UNBRANDED) 3 1/2" DSDD 135TPI	£10.50	£34.50	£60.50	£119.00

**\*\*BUY 100 UNBRANDED SONY DISKS & GET A FREE 100 CAPACITY STORAGE SYSTEM - WORTH £9.90\*\***

## 3 1/2" DISK STORAGE SYSTEMS



A0023	50 CAPACITY	£7.90
A0053	100 CAPACITY	£9.90
A0063	120 CAPACITY	£10.90

**\*\* BUY 5 DISK STORAGE SYSTEMS & GET 1 FREE! \*\***

## ACCESSORIES

COLOUR SCREEN FILTER FOR 14" MONITOR

A1101 **£16.50**

### MICE

NAKSHA suitable for Amiga & Atari

X2009 **£34.00**

### EXTERNAL DISK DRIVES

X1110	3 1/2" AMIGA, D/SIDED	£79.00
X1112	5 1/4" AMIGA, D/SIDED, 40/80T	£125.00
X1100	3 1/2" ATARI, D/SIDED	£85.00
X1102	5 1/4" ATARI, D/SIDED, 40/80T	£125.00

AMIGA HI-RES. REPLACEMENT MOUSE

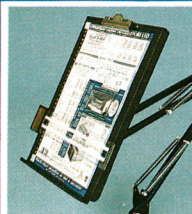
X2006 **£24.50**

ATARI HI-RES. REPLACEMENT MOUSE

X2005 **£24.50**

PRICES FULLY INCLUSIVE OF VAT & DELIVERY (UK MAINLAND ONLY)

## COPY HOLDERS



Desk Top Ref. A0301 **£7.90**  
With adjustable arm  
80 Column Ref. A0302 **£13.50**  
132 Column Ref. A0303 **£19.50**

A copy holder that can hold a book

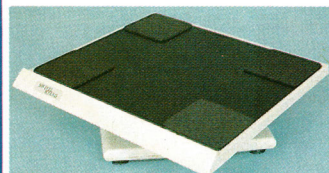
A0300 **£12.50**



**NEW**

## MONITOR STAND

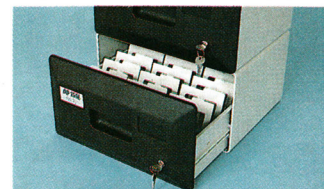
HOLDS 14" MONITOR **£14.50**



Ref. A0701 All monitor stands revolve 360° and tilt up to 25°

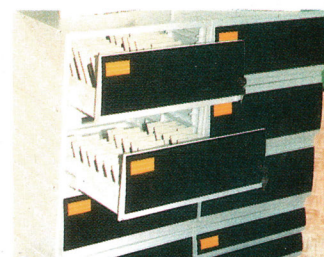
## STACKABLE DISK STORAGE SYSTEMS

- STACKABLE ● LOCKABLE
- IMPACT RESISTANT



3 1/2" 150 CAP Ref. A0084  
5 1/4" 180 CAP Ref. A0194

**£24.50**



3 1/2" 220 CAP. Ref. A0085  
5 1/2" 260 CAP. Ref. A0195

**£32.50**

**£2.50 DISCOUNT (OR VOUCHERS) FOR EVERY £20.00 SPENT ON OMD DISKS**



**SONY**

- BRANDED DISKS
- BOXED IN 10's
- 3 1/2" DSDD

D5110 **£9.90**

Prices valid for any quantity! (Boxes cannot be split)

**SPECIAL ELECTRIFYING OFFERS FROM OMD**

H0000 STAR LC10 (MONO) PRINTER **£158.00** (£137.39 Ex. VAT)  
H0202 PANASONIC KXP 1124 PRINTER **£250.00** (£217.39 Ex. VAT)  
INCLUDES FREE PARALLEL PRINTER CABLE!

## NAKSHA MOUSE

280 dpi ● suitable for Amiga, Atari & Amstrad  
Includes: ● Mouse Pad ● Mouse Pocket

X2009 **ONLY £34.00**

## PRINTERS

**star**

H0000 LC10 (MONO) **£158.00**  
H0009 LC10 MK II **£195.00**  
H0001 LC10 (COLOUR) **£205.00**  
H0002 LC24-10 **£245.00**

**CITIZEN**

H0100 CITIZEN 120D+ **£139.00**  
H0101 SWIFT 24 **£320.00**  
X0900 SWIFT 24 COLOUR KIT **£38.00**  
H0102 PRODOT 9 **£375.00**

**Panasonic**

H0200 KXP 1081 **£155.00**  
H0201 KXP 1180 **£170.00**  
H0202 KXP 1124 **£250.00**

ALL PRINTERS INCLUDE A FREE PARALLEL PRINTER CABLE. REMEMBER ALL OUR PRINTER PRICES INCLUDE VAT & DELIVERY.

## PRINTER RIBBONS

R4820 AMSTRAD DMP2000 **£2.75**  
R4260 AMSTRAD DMP4000 **£4.50**  
R4880 CITIZEN 120D **£4.25**  
R4770 EPSON LQ 500/800 **£3.90**  
R4540 EPSON LX80 **£2.90**  
R2730 EPSON MX80 **£2.90**  
R8440 NEC P2200 **£4.50**  
R2280 PANASONIC KXP 1081 **£4.50**  
R9040 PANASONIC KXP1124 **£4.90**  
R8610 STAR LC10 **£3.90**  
R8696 STAR LC10 COLOUR ORIG. **£7.90**  
R8680 STAR LC24-10 **£4.50**

Ribbons available for many other printers, please call for details.

## CABLES

A0801 25 Male/36 Male **£7.50**  
A0804 25 Male/25 Male **£8.50**  
A0805 25 Male/25 Female **£8.50**  
A0806 36 Male/36 Male **£8.50**

All cables are 2 metre. Longer lengths available on request.

## PRINTER STAND

SPACE SAVER

Made of moulded plastic. Feeds and refolds paper underneath the printer. Takes up hardly more space than the printer itself.



YUS-25A for 80 col. printer. Ref. A0203 **£32.50**  
YUS-25B for 130 col. printer. Ref. A0204 **£34.50**

## PRINTER BUFFER

A simple low cost solution to increase the size of your printer's buffer.

X0200 **£76.00**

## MANUAL DATA SWITCHES



All metal case with rotary switches.

	Ref.	36pin.	Ref.	25pin
2 way	X0001	<b>£17.50</b>	X0011	<b>£16.50</b>
4 way	X0003	<b>£22.50</b>	X0013	<b>£21.50</b>
X way	X0004	<b>£24.50</b>	X0014	<b>£23.50</b>

64K IN-LINE PRINTER BUFFER



**HOW TO ORDER** IMPORTANT PLEASE REMEMBER TO QUOTE THE REFERENCE NUMBER, WHERE AVAILABLE, OF THE ITEM(S) THAT YOU WISH TO ORDER. ALSO PLEASE QUOTE THE PRICE OF THE ITEM, ESPECIALLY IF IT IS ONE OF OUR SPECIAL OFFERS.

**PAYMENT TERMS:** \*CHEQUE: Please make cheques payable to OMD Ltd. and send them to the address above. Please allow 3 days for cheques to clear.

\*CREDIT CARD: We accept Access & Visa Credit Cards. To place your order please telephone on (0533) 313188 Please allow up to 5 working days for delivery.

**NEXT WORKING DAY DELIVERY SERVICE AVAILABLE FOR £3.75**

EDUCATIONAL DISCOUNTS AVAILABLE. PLEASE CALL FOR DETAILS.

ALL PRICES INCLUDE VAT & DELIVERY (U.K. MAINLAND ONLY)

**52 PAGE FULLY ILLUSTRATED CATALOGUE NOW AVAILABLE - CALL NOW FOR YOUR COPY**



Managing Editor  
Derek Meakin

Editors  
Nic Veitch  
John Kennedy

Disk Editor  
Jeff Walker

Production Editor  
Peter Glover

Art Editor  
Tym Lecky

Digital Stuntman  
Ian Tindale

Advertisement Manager  
John Snowdon

Advertising Sales  
Tracy Carroll

Published by:  
Interactive Publishing Ltd,  
Europa House, Adlington Park,  
Adlington, Macclesfield SK10 4NP.

Editorial: 0625 878888  
Advertising: 0625 878888  
Subscriptions: 051-357 2961  
Fax: 0625 879966  
MicroLink: MAG001  
CIX: amigacomputing

**interactive  
publishing**

Chairman  
Derek Meakin

Managing Director  
Hugh Gollner

Commercial Director  
David Hirst

Amiga Computing welcomes articles for publication. Material should be sent on Amiga readable floppy disk. The return of material cannot be guaranteed. Contributions can only be accepted for publication by Interactive Publishing Ltd on an all-rights basis.

© 1990 Interactive Publishing Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements.

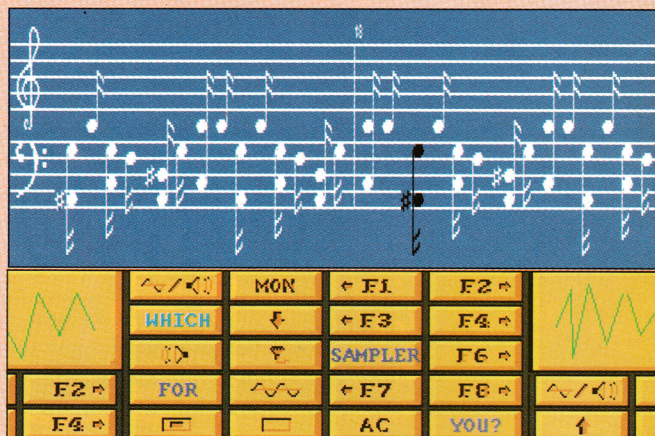
Amiga Computing is an independent publication and Commodore Business Machines (U.K.) Ltd is not responsible for any of the articles in this issue or for any of the opinions expressed (and a good thing too).

News trade distribution: Comag Magazine Marketing, Tavistock Road, West Drayton, Middlesex UB7 7QE. Tel: (0895) 444055.

## COVER STORY

# 69 AMIGA MUSIC

Making funny noises is something all Amigas are good at. They can digitise real sounds, compose tunes and even play synthesisers. For your delight and delectation, *Amiga Computing* checks out the hardware and software options. Looking for a new sequencer or sampler? Stay cool – we're hip to the beat.



## AMIGA SCENE

# 7 NEWS ROUND-UP

The latest news on the CDTV, new Amiga bundles, amazing new HAM paint program and an incredible ray tracing package from Finland.

## LETTERS

# 19 EZRA SURF'S POSTBOX

If you're feeling low, 'Cos your Amiga won't go, Don't just do nowt, Give Ezra a shout!

## GAMES

# 36 AMIGA ARCADE

All the gossip from the CES, including new products from Rainbow Arts, Domark, Infogrames and new software house Renegade.

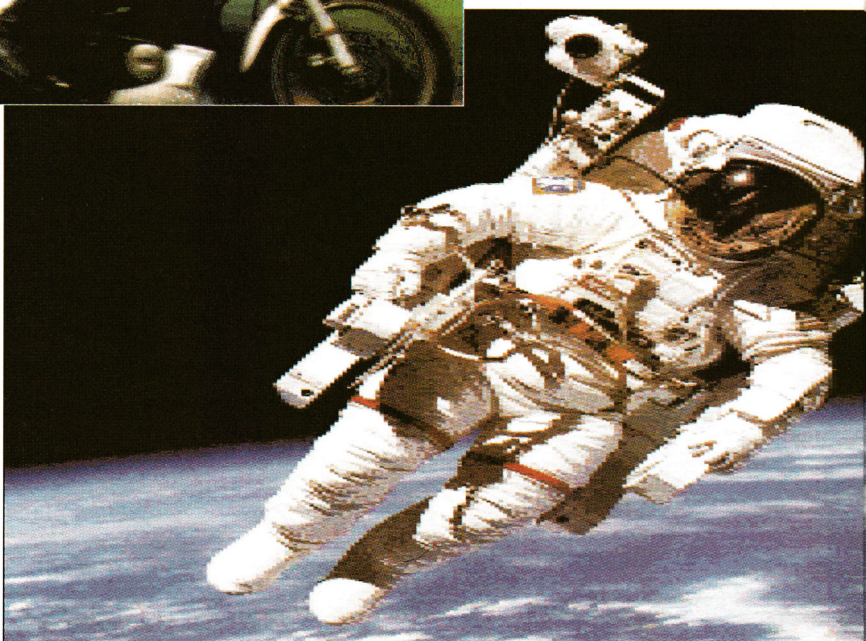
## FEATURE

# 81 AMIGA COLOUR PUBLISHING

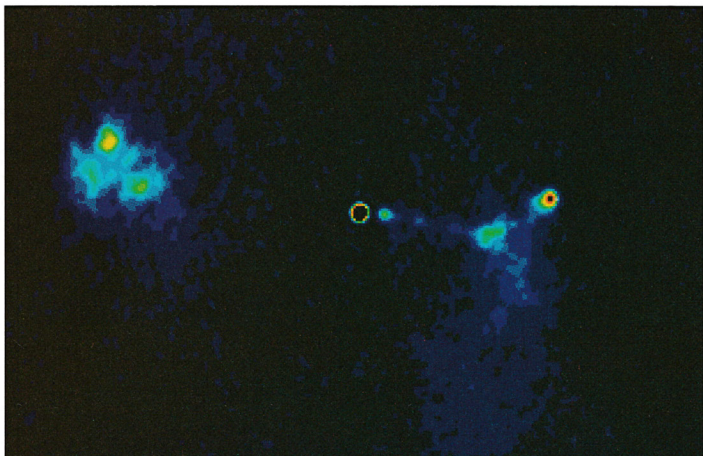
Professional 24 bit image processing comes to the Amiga. You too can produce your own full-colour magazine using any household scanner.



These images were created on an Amiga supporting 24 bitplane graphics. The technology to create your own full-colour magazine is now available







This is a quasar as seen by an Amiga based at Jodrell Bank, Cheshire

## FEATURE

# 65

### EARTH CALLING CHESHIRE

Jodrell Bank is one of the world's premier radio telescope centres. Guess which computer they use as a graphics terminal? Joe Garner investigates.

## PUBLIC DOMAIN

# 93

### DO IT YOURSELF

How to build yourself some exciting – and cheap – personalised programming environments. Stewart C Russell has advice on compilers and editors.

## COMPETITION

# 89

### READER SURVEY

There had to be a catch, didn't there? If you want a chance a winning the prize of your choice you'll have to answer some questions first!

## SHORTIES

# 105

### RGB COLOUR SPLITTER

If you have a digitiser and want to grab colour video images, you're looking at some very expensive hardware. Aren't you? Perhaps not.



MACHINE CODE



CODE CLINIC



MUSIC



COMMS



D.T.P.

# AMIGA

Something for everyone!

The complete guide to all things Amiga. Everything from music to comms, DTP to graphics, AMOS to machine code: All in their own regular columns.

Catch up on the latest news, save time with hints and tips and discover new ways of using your Amiga. It's all here, written by people who know what they're talking about.

If you want to really use your Amiga, you've come to the right place.

# 102



GRAPHICS



AMOS

ALMANAC

## SWIV

You'll have to play this demo to believe it: Continuous scrolling, mega weapons, addictive action... Four minutes of endless fun.

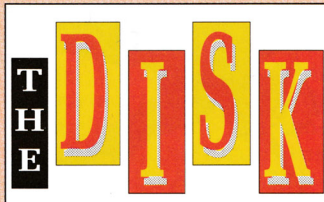


## Cribbage

The authentic card game, now playing on an Amiga near you. Brush up on your tactics with this superb implementation.



# 59

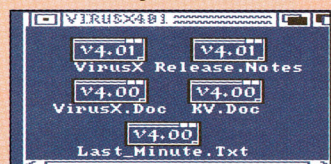


## Cursor v1.1

Tired of slow old AmigaBasic programs? Want to speed things up without having to learn C or Assembler? You're in luck: We have the technology.

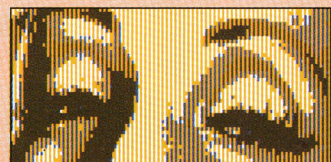
## VirusX401

The very, very latest version of the utility every virus hates. If you don't protect yourself, your software is in danger. Use VirusX401.



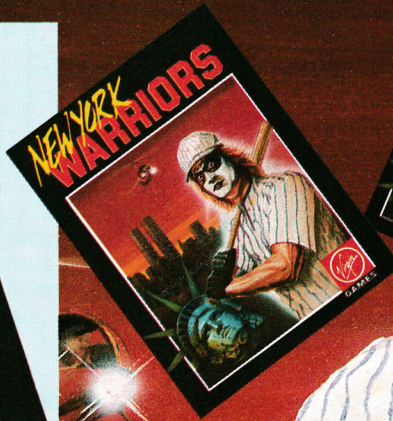
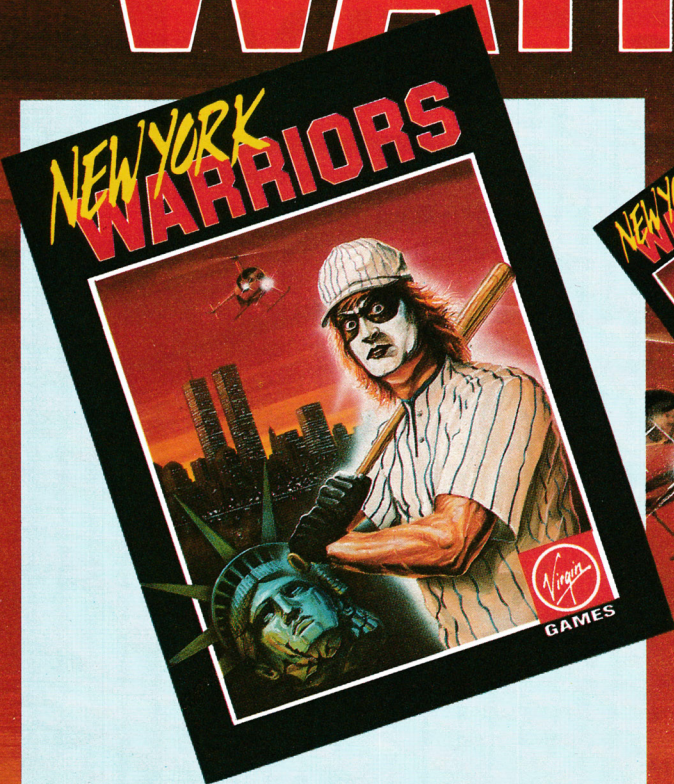
## Plus

More AMOS listings, more fabulous music and more useful programs for Code Clinic fans everywhere.





# NEW YORK WARRIORS



The Year 2014 – New York is lost to organised crime.  
Only a valiant few remain loyal to law and order  
– They are THE WARRIORS.

You, as 'THE WARRIOR' have to fight your way through  
the streets to save New York using an  
awesome array of devastating  
weapons. If you fail, New York  
will be destroyed by a nuclear  
device planted in the World  
Trade Centre.

You cannot, you must not, fail!

SPECTRUM



AMSTRAD

AMIGA



ENGLISH



FRANCAIS



DEUTSCH



ITALIANO



GAMES

© 1990 ARCADIA SYSTEMS INC.  
© VIRGIN MASTERTRONIC LIMITED  
16 PORTLAND ROAD, LONDON, W11 4LA



# AMIGA SCENE

## CDTV launch delayed

AT the beginning of the Computer Entertainment Show in September the usual crowd of computer journos were invited to the usual Commodore breakfast press launch.

Commodore UK Supremo Steve Franklin took centre stage and proceeded to spill the beans on the current state of the CDTV or *Commodore Dynamic Total Vision*.

The Amiga-based CDrom machine was originally scheduled for a September launch, but rumours of delays have been circulation ever since its unveiling at the Consumer Electronics Show in Chicago. Inevitably

there was air of expectancy as Franklin outlined his plans.

Commodore UK are initially releasing only about 1500 to 2000 CDTV's to selected developers, companies and members of the media in the next few weeks.

The plan is to let *them* to do the Beta testing and major bug finding. In exchange for their efforts, Commodore will give them a "generous discount" on the price.

The finished product should be available from "mid February" with more than 40 specially written pieces of software already

available. Commodore are hoping to have sold around 350-500 thousand machines within a year. By this time they hope that over 140 titles will be available. These do not include straight conversions of existing Amiga games, rather unique CDrom-based items such as encyclopedias and interactive libraries.

When asked if the CDrom drive would be made available for existing Amiga owners, Franklin said that it was a possibility, depending on demand.

In other words, if you want your Amiga to be able to support the new optical media, you'll have to write

to Commodore and tell them.

The delay in the CDTV's launch may disrupt Commodore's plans to create their own standard for CDroms. The rival CDI system produced by Philips looked set to become the world standard, with only Commodore's plan to swamp the planet with machines using their system posing any threat.

Obviously, *Amiga Computing* are hoping to get their hands on a CDTV as soon as possible, although Commodore PR Andrew Ball said something rude when we told him we needed one more than anyone else.

## Real design, real solutions

THE world of ray tracing has been quiet for too long. Sculpt once dominated but a failure to update the software left it commanding a stagnant market. Something had to change.

Now the world of ray tracing and indeed, graphics as a whole, is coming back to life. There has been no lack of commitment by users, as entries to this year's Amiga Centre Scotland animation competition has shown. What the world has been waiting for is a significant release. It got two.

Last month we covered one of those releases, 3D Pro. The second emanates from a Finnish company with the unlikely name of Realsoft.

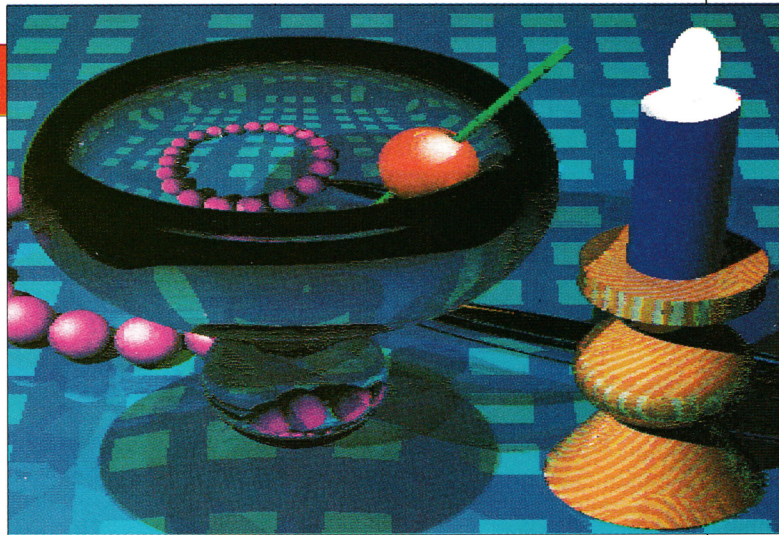
Called Real3D, it claims to be the "fastest ray tracing program with animation and solid modelling for Amiga users". From what we saw, this is no exaggeration. Rendering time has been reduced from a time-frame that could be mea-

sured in cups of tea (in the Sculpt era) to one measured in mere sips of tea.

What's more, the rendering time is more or less stable - that is, it is less dependant on the number of objects being rendered, with a large percentage increase in the number of objects, the render time in a particular mode is not increased excessively.

Another great saving in time will be made possible by rendering only a small window in the whole image. It will be possible to render a whole image at a very low resolution and then select just a small area of interest to be rendered in extreme detail.

For producing animations this has the obvious advan-



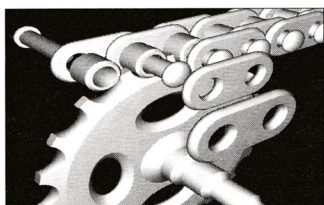
tage that areas in which no change takes place do not need to be re-rendered.

But speed is not everything. It is the approach which matters most. With an engineer in the programming team, the result was bound to be a very CAD-

biased product.

The inclusion of a wide base of primitives and the use of Boolean functions on these shapes enables the easy construction of engineering-style drawings.

Unlike Sculpt there will be no vertex editing. In Sculpt, objects were all made up of small facets or triangles. This meant the system was flexible to manipulating individual points on an object's surface, but also led to the dis-





► tinctive angular effects which made Sculpt images instantly recognisable.

The effort here is realism above all else. A sphere has no points, it is a mathematical shape – that is the way in which all the objects are modelled.

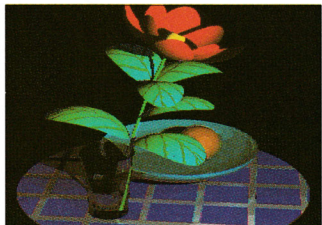
Other features will include full colour texture-mapping and user definable materials.

These have three slider-determined properties – opacity, reflectance and “speed of light” (refractive index).

There will be many functions for the manipulation of 2D IFFs for use as backgrounds, textures and for a technique called “pixel-replace” where every pixel in the original bitmap is replaced by a particular primitive object.

Animation will not be neglected. With the inclusion of powerful features to rotate and move both objects and camera, and the ability to display a fast wireframe preview, the software has been seen to knock out fairly impressive anims in a matter of minutes.

The Sculpt syndrome



should not happen again – Realsoft seem to be fairly committed to producing upgrades, more so since this is a product which the programming time have spent their entire Amiga-lifetime bringing to fruition.

Already on the cards are a 24-bit colour version and routines for importing Sculpt files.

The 24-bit variant will be gratefully received by Amiga Centre Scotland, Real3D distributors in this country, as it may be ready in time for the launch of their own 24-bit board, sometime this year.

For details contact the Amiga Centre Scotland on 031 557 4242.

## A1500 winner collects

JOHN Kemp, the winner of the Checkmate Systems A1500 announced in last month's issue, was – to put it mildly – chuffed to bits when Steve Jones handed over his prize.

“He nearly shook my arm off” said Steve, “He was really pleased.” And so he should be, for Checkmate even fitted his A500 into the A1500 casing for him.

Those of us not lucky enough to win *Amiga Computing* competitions will be interested in the



new products from Checkmate such as the new A590 expansion card which allows internal fitting of the Commodore hard drive.

For the user wishing to

expand bit by bit, Checkmate will supply the keyboard casing only, for £60. More exciting things are coming, but Steve would say nothing except “They are very exciting!”

## Socket to me

GOOD news for Amiga owners with more peripherals than connectors: Canadian company Prespect have released a solution to all your problems – the MFC MultiFaceCard. It slots into your A2000 or A3000 and provides another pair each of serial and parallel ports.

The supplied software makes full use of the Amiga's multitasking, so in theory you would be able to run six separate tasks, each having their own serial or parallel port.

Just what BBS owners have been waiting for, we suspect.

For more details, contact the European branch of Prespect in Germany on 89 354 4962.

## A590 expansions

ALTHOUGH undeniably good value for money, the official Commodore A590 hard drive has been criticised for being both slow and a bit on the small side.

Almathera Systems have recognised this failing and offer quite an amazing service: For a reasonable fee they will replace the drive mechanism in your A590 with a newer, faster (sometimes up to five times faster) unit.

Just think: If you wanted you could have a 180Mb drive in your standard A590 casing, with no external

cables or power supplies.

Prices start at about £315 for a 43Mb drive and rise to £585 for a huge 180Mb.

For more details call Almathera on 081 668 9605.

## You CED it

SILICA Systems have taken on distribution on the ASDG range of products, including the rather brilliant Cygnus Ed Professional 2 text editor reviewed in the August issue.

CED2 now costs £59.95 (instead of £89.95) and for details on it – or any other ASDG products – you should contact Silica on 081 309 1111.

## Joystick from down under

BASED on rugged arcade machine joysticks, one of the first offerings from new company Sold Gold Marketing (0389 55973) is Star Cursor, a heavy duty joystick which first saw life in Australia.

Stringent tests have shown that Star Cursor will stand up to 50 million operations without breaking down and its manufacturers say it will cope with normal use for five years without failing.

“It works through direct electrical contact instead of floating components which

## Commodore goes a bundle

THE Amiga has been rebounded to cash in on the lucrative Christmas period spending spree.

The “Screen Gems” pack comes with *Days of Thunder*, *Back to the Future II*, *Shadow of the Beast II*, *Nightbreed* and the ever present *Deluxe Paint II*.

Commodore are expecting sales of around 130,000 units over the Christmas period – an exceptional number of machines.

A new educational pack called “First Steps” has also been announced, and is the first bundle to include a half meg memo-

ry expansion as standard – which is proof that the Amiga is growing well beyond its game console beginnings.

For the same reasons, Amiga peripherals are now being pushed as ideal Christmas pressies and will come bundled with various pieces of productivity software.

As an aside, to Commodore's embarrassment the C64 is still selling in phenomenal numbers.

In fact, this Christmas it is expected to sell more than last year, helped no doubt by the new 64 games console.



can easily break", said Tony Morris of SGM. "We have thrown it against the wall and still done it no damage. Unless someone actually takes it apart and puts it back together wrongly, it will continue working and comes with a three-year guarantee".

Star Cursor costs £29.95 plus £2 post and packing.

## Conference on the line

MICROLINK, the computer-based communications service, now have a multi-user, real-time chat facility which includes many advanced features not available on other systems.

Called The Forum, this free service allows any number of subscribers to talk to each other but also offers private computer conversations with a facility for users to choose who they want to communicate with and exclude others.

Subscribers can set up a "room" off the main area of The Forum so that confidential conversations can take place between two or more people.

Once such a room is created, the user has the power to admit only the people wanted in the discussion. There are plans for MicroLink staff to be available at certain times and also for celebrities to make guest appearances in The Forum.

Also now on line is an improved version of WineLink with 84 different menu options including special beers, lagers, wines, brandies and port.

Subscribers can place orders at very competitive prices and can also send gift packs to friends in a presentation box with personal message.

## Opting out

RUMOURS that Word-Perfect 5.0 and 5.1 are to be made available for the Amiga have been denied. A spokesman for the company told Amiga Computing that

## Moving into megabyte land

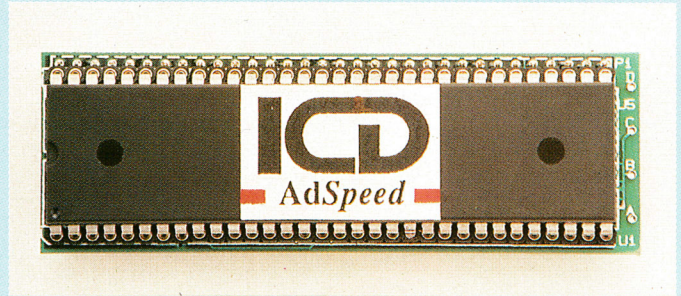
BACK in the old days, any amount of memory over 16k was more than you could possibly use and much more than you could possibly afford.

In these enlightened days of course, the Amiga user may be seriously looking at expanding his or her computer to the dizzy heights of several megabytes.

There are several ways of doing this on an A500, and the two major systems are from ICD and Cortex.

The ICD AdRAM unit fits into the trapdoor, and is available in the form of a 4Mb motherboard, a further 2Mb daughterboard and various steps in between. It's small, it's neat and you can get one from either Third Coast or Silica Systems.

The Cortex unit is an externally fitting, externally powered box which plugs into the side of the A500 and has a through connec-



tor to allow the A590 hard drive to be connected. It can be expanded in several steps to 8Mb. It's also small, also neat and you can get one from Cortex (051-236 0480).

Which is best? Well, you'll have to wait until next month to find out, for at this very moment the team are putting them both through their paces. Exciting, isn't it?

Besides ram expansions, ICD have been busy trying to speed things up. The AdSpeed processor accel-

erator is rather cunning: Instead of just using the most expensive member of the 680x0 family in place of the stock CPU, AdSpeed uses what at first might seem a rather tame 14.7 Mhz 68000.

The clever bit is the 32k of Static ram used to cache data and instructions, which will speed things to the extent that AdSpeed can run faster than some 68020 cards. The use of a 68000 also means that software compatibility is as good as it can be. Looks nice.

while it will continue to support the Amiga with maintenance releases which may add new power features, there are no plans to develop Amiga versions of the latest upgrades.

## Colours galore

AMIGA 2000 and 3000 owners will soon be able to display 16 million colour images on their machines with the new Harlequin Framebuffer from Amiga Centre Scotland (031-557 4242).

More than a year in development, this tasty offering should be available before the end of 1990, according to the latest word from ACS boss Martin Lowe.

Although he makes no promises he hopes Harlequin will have its first public showing at the Computer Graphics Show at Alexandra Palace during the first week in November.

Pricing has yet to be fixed but Martin is aiming to bring it in under the £2,000 mark.

Harlequin features RGB analogue broadcast specification output, full 24 bits/pixel colour giving 16,777,216 colours, output interlace and non-interlace, full overscan in all modes and resolutions and is Genlockable in interlace mode.

Both PAL and NTSC versions are available with 32 bits/pixel design, software to load IFF, Sculpt, ScanLab, Digi-View and other files and programming interface supplied.

Harlequin comes in four configurations - a base model; base model with double buffering; base model with Alpha channel and base model with both double buffering and Alpha channel. Other options include CCIR 656 for 601 digital video, PAL encoder, Harlequin genlock, Amiga Genlock and single frame controller. The board is

designed to 100 pin Zorro II specification for internal use in the Amiga 2000 and 3000 and ACS have no plans for either A500 or 1000 versions.

Harlequin can be used without additional hardware but since 24 bit image files are over 1Mb uncompressed, a hard disc is recommended.

## Network newsflash

PAUL Fleetwood, a dealer for the Nine Tiles network reviewed in the October issue of *Amiga Computing*, has asked us to reiterate that the prices mentioned in the article were per card. Obviously this means that for a network of two machines, you'll need two cards.

The networks will also work best with Amigas which have at least 1Mb of ram.





## US sales slump, Europe's boom

THE grass may be greener on the other side of the fence but this is certainly not the case on the other side of the Atlantic if Commodore International's latest figures are anything to go by.

Profits dropped from \$51.3 million last year to a mere \$1.5 million for the year ending June 30, 1990 although total sales were only down from \$939.7 million to \$887.3 million.

Meanwhile, Commodore UK have preceeded the release of their official figures with an announcement that their turnover for that period rose to £75 million from the previous year's figure of £43 million. Sales in France, Italy, Denmark and Holland are also said to have risen.

Commodore International say their massive drop in profits is due to three factors – adverse exchange rates, rising costs and a six per cent drop in sales as emphasis was moved from the C64 to the higher-margin Amiga.

Following this move, Amiga sales are said to have shown a 40 per cent increase in the last quarter with total sales up 10 per cent in the same period.

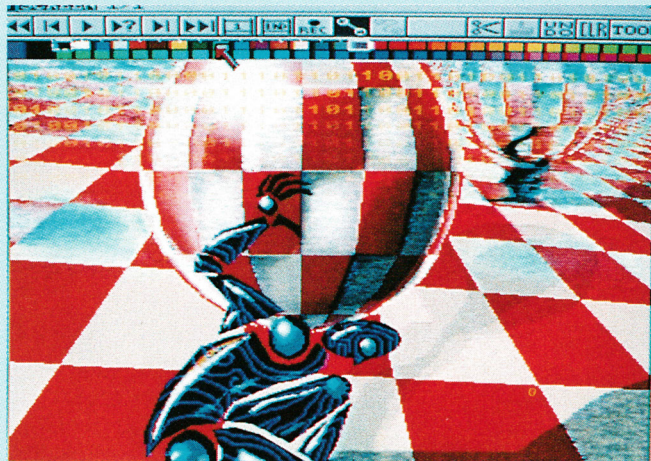
In the UK, Commodore claim to have an installed Amiga base of more than 345,000 machines and predict that they will hit the

## New HAM package

AEGIS SpectraColor comes from those nice people who brought us Photon Paint, and is the first HAM package to support full DeluxePaint style Brush Animation.

For those not in the know, "Hold and Modify" is a special Amiga graphics mode which allows 4,096 colours to be displayed onscreen at the same time. The only drawback with it is fair whack of the available processor time it uses, making animation – at best – difficult.

Looking through the specifications, SpectraColor



looks as though it will become the new standard by which all future art packages will be judged, for not only does it support brush

anims, but it comes with a full set of image tools which will do everything from 3D extrusions to shadow directions.

half million mark by the end of the year.

"Commodore's sales growth in the UK and our other European markets shows the strength of our product range", said UK managing director Steve Franklin.

Despite this, the UK operation has seen a number of recent departures including financial director Mike McGeehan, members of the marketing staff and business systems products manager Jennifer Perry.

## Teaching technology

COMPUTERS are valuable in giving physically handicapped people or those with learning difficulties a better standard of life. E.A.S.T.

(Education And Social work Training) now helps the disabled, their carers and teachers to get more out of new technology.

E.A.S.T. staff undertake training courses throughout Scotland and the UK. Through these courses and consultancy, they also aim to help shape future policies on IT training for the disabled.

They have extensive experience in the use of computers in a variety of settings and have detailed technical skills at their disposal. Staff are also very experienced in putting their knowledge across whether to people who are complete beginners in computers or those who are more experienced.

Courses include Computers for Beginners, Adult Basic Education,

Switch Control, Remedial Education, Communication and Evaluation. They are held for individuals or groups. More details can be obtained from E.A.S.T. on 031-669 3916.

## Taking on the tutors

EDUCATIONAL software house Kosmos (05255 3942) hve now released Amiga versions of all of their most popular titles.

Four foreign language programs lead the new releases. They are The French Mistress, The German Master, The Spanish Tutor and The Italian Tutor. They are aimed at language students from beginners to GCSE level and above.

The programs include large ready-made vocabularies of foreign and english words covering nouns, adjectives, adverbs, conjunctions, prepositions, phrases and verbs conjugated in six tenses.

Students can choose from a wide range of learning and test modes and can also create their own lessons for homework or revision.

For ease of use, vocabulary is arranged under 32 separate heading such as the family, the dwelling, vehicles and food and drink and cover 2,500 words. Price, £19.95.

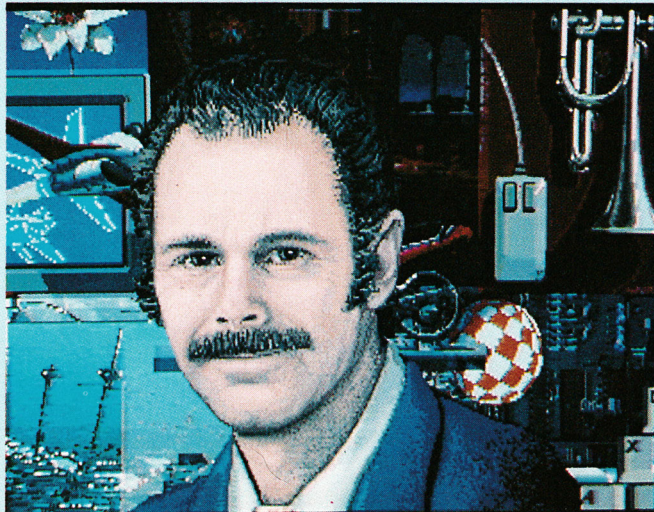
Also just released by

## Amiga calendar Christmas is coming!

LOOKING for the perfect gift for an Amiga-using loved one? How about the 1991 Jim Sachs Collection Calendar.

Each month features a classic image from this renowned Amiga artist, along with helpful hints and background information.

Sounds wonderful. If you think so too, get in touch with Oxxi Inc.





The view of magazines and Amiga owners alike is unanimous: **AMOS – The Creator** is an astonishing piece of software. Now, for the first time, you can exploit to the full the awesome power of your Amiga. Whatever you want to create, AMOS will turn your dreams into reality.

# AWESOME

## What the press say:

“It's better than we ever hoped for. It's such an easy system to get to grips with, but staggeringly open-ended, so that any Amiga owner can benefit from it. It's wonderful and worth every penny. Get it – now!”

*Popular Computing Weekly, July 5-11*

“A must for Amiga users who would like to be able to develop their own games, but can't face the thought of learning machine code.”

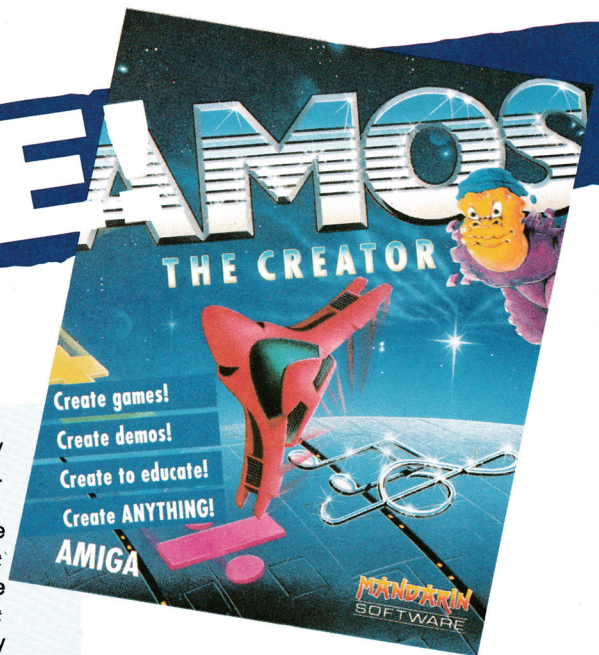
*ACE, August*

“An incredible product that should create more incredible products. It looks like the days of the machine-code programmer are numbered.”

*Commodore User, August*

“Can AMOS be used to produce commercial-quality games? The answer seems undoubtedly 'Yes'. No other language will let you do so much with so little effort. For producing programs that need to use ultra-fast graphics and animation, super-smooth scrolling and scintillating sound, there is only one choice... and it's name is AMOS”

*Amiga Format, August*



## What AMOS owners say:

“Completely brilliant – far better than I ever imagined possible – I absolutely love it”

*Liam Murphy, Colne*

“Just bloody great... Simply no other software of this class available for the Amiga or PC”

*Simon Nicoll, Blandford*

“AMOS is perfect. The Amiga was made for AMOS”

*K Sumpster, Swindon*

“A very impressive package – without doubt the very best Basic available on the Amiga. Incredible graphics manipulation commands”

*Paul Feazey, Oxford*

“Brilliant! I've done more with AMOS in four days than with HiSoft Basic in six months!”

*JR Arkley, Woolton*

“The best value for money package I have ever bought for the Amiga. I really feel that you want me to enjoy using the language.”

*Colin Mercer, Bolton*

“On par to be the best Basic language ever.”

*S Hawkes, West Bromwich*

“Endless possibilities and uses. Congratulations!”

*Michael Fletcher, Mold*

“Excellent! Amazing! Brilliant! Superlative! etc etc... I love the commands and ease of use. I understand now why AMOS is called The Creator”

*DM Richmond, Blackpool*

“This is going to be the best selling package on the Amiga! It will allow my ideas to come to life”

*David Linacre, Chesterfield*

“AMOS is very fast, friendly and no doubt about it, the best program for the Amiga!”

*David Harrigan, Derry*

“As a previous STOS user I can't fault it. Brilliant! François does it again!!!”

*Neil Burton, Tidworth*

“Excellent. The speed for a Basic is breathtaking”

*Delwyn Farr, Dukinfield*

“Simply awesome – the most impressive piece of coding I have ever seen!”

*M Rackley, Stone*

“An excellent job! AMOS is faster than I'd ever dreamed possible!”

*David Milton, Welwyn Garden City*

“An absolutely fantastic package that uses the Amiga to its full potential”

*NK Ball, Stoke-on-Trent*

“Everything I want to do with the Amiga can be done quickly and easily with AMOS”

*Stuart Margerison, Blackburn*

“Fantastic. I knocked up something in a day which would have taken a month in assembler”

*Gary Symons, Bournemouth*

“It's the best piece of software I've bought for the Amiga. Worth twice the price.”

*SA Sweet, Herne Bay*

“AMOS will do for Amiga programming what the invention of fire did for civilisation”

*Kevin Smith, Marden*

“Looks set to be the most used piece of software ever on my Amiga”

*Martin Bruce, Croyden*

“The best thing that could have happened to the Amiga”

*Derek Bere, Fradley*

## What AMOS owners are going to create:

“An educational program for motorists... a graphical role-playing game... a Star Trek game... a Mandelbrot explorer... database-type programs... a platform beat-'em-up like Barbarian... scientific programs... a boxing simulation... a conversion of Star Chess... conversions of old Spectrum classics... video titling software... an evolution simulator... printed circuit board designer... a football game... a Speedball-type game... a flight simulator... small business accounts... a cricket management game... a tactical wargame... producing plans of archaeological sites... home finance package... flashy scrolling demos – and this is just the beginning!”

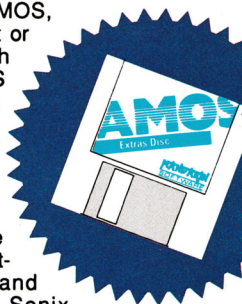
**Unleash your imagination – get AMOS now!**

## WHAT YOU GET:

AMOS Basic, sprite designer, Magic Forest and Amsteroids arcade games, Castle AMOS graphical adventure, Number Leap educational game, 300-page manual with more than 80 example programs on disc, sample tunes, AMOS Club Newsletter ...and more!

## EXTRA DISC FREE!

Now **every** copy of AMOS, whether you buy it direct or from a retailer, comes with an additional disc: AMOS Extras! It's packed with useful programs: AMOS Sprites 600, AMAL (AMOS Animation Language) editor, menu editor, large text scroller, IFF brush to sprite converter, scrolling shoot-'em-up game and Soundtracker and Sonix converters.



**Do you already own AMOS? Send in your registration card to obtain your free copy!**

**ALL THIS FOR JUST  
£49.99!**

*Our guarantee: Buy direct from us, and if you're not delighted with your purchase, return it to us within 14 days for a complete refund.*

Please send me **AMOS – The Creator** and my **free AMOS Extras Disc**

☐ I enclose a cheque payable to Mandarin Software for £49.99

Postage & packaging free in the UK. Add £2 per program for Europe.

☐ Please debit my Access/Visa/Connect card number:

\_\_\_\_\_

Expiry date:  /

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

\_\_\_\_\_

Send to: Database Direct, FREEPOST,

Ellesmere Port, South Wirral L65 3EB.

Credit card orders: Tel: 051-357 1275



Kosmos are two educational quiz programs called Answer Back Junior Quiz and Answer Back Senior Quiz. Including large databases of general knowledge, each program contains 750 questions spread over 15 topics.

For the six to 11 year-olds, topics cover such subjects as nature, music, word fun, sums and spelling. The 11 and over topics include history, geography, astronomy, inventions and sport.

Answer Back programs cost £19.95 and are backed by supplementary quiz files, Factfile 500, at £9.95 each.

## Is there a doctor in the house?

THAT well-known producer of music software, Dr T, is moving house. The new address - still in the US we're afraid - is Suite 1B, 100 Crescent Road, Needham, MA 02192, telephone 617 455 1454.

That's where to go if you want to hassle them about any of their products, including the intelligent music system "M" and the forthcoming SMPTE synchroniser *Phantom*. The SMPTE device is especially interesting, as it will interface with software such as the imminent *Showmaker* from Gold Disk.

## Faster by Fourier

HERE'S something which *real* programmers may find useful - A full mathematical library written in C.

If you have need to make use of Fast Fourier Transforms, matrix operations or statistical analysis in your programs but have no desire to re-invent the mathematical wheel, the NAG C Library could be the unique solution to your univariate estimations. (Or, in English, a Good Thing.)

Map on to their set by calling 0865 511245.

## Big names line up for THE show

THE Computer Shopper Show - the event which smashed all previous records for pre-Christmas computer exhibitions in 1989 - is all set to retain its title of the UK's largest Amiga event when it opens at Wembley Conference Centre on December 6.

Leading suppliers in the Commodore Amiga world will be on hand with more than 100 of the 280 stands offering Amiga related products to ensure that Shopper lives up to its reputation as the ultimate one-stop shopping venue for both hardware and software Christmas bargains.

Household names in the Amiga market who have already committed to the show include Anco Software, CDS Software, Database/Mandarin Software, Delta Leisure, Digita International, Dowling Computers,

Evesham Micros, Hi Soft, GFA Data Media, Impressions, Mindscape, Ocean, Real Things, Rombo, US Action and Virgin Mastertronic.

The 1990 event will also feature a major advice centre from where experts, including leading Amiga exponents, will dispense free unbiased guidance to visitors seeking to acquire the most relevant software, hardware or peripherals to suite their needs.

Organised by Blenheim Database Exhibitions and sponsored by Computer Shopper magazine, the show runs from December 6 to 9.

The move to Wembley from its original venue of Alexandra Palace and the addition of an extra day follow the unprecedented success of last year's inaugural event.

It attracted a total of

26,658 visitors, a figure verified by the Exhibition Audience Audits Company and featured special offers estimated to be worth in excess of £1,000,000. Up to 40,000 visitors are expected at this year's show.

Computer Shopper will also be used to raise money for the Starlight Foundation, the charity set up to help seriously ill children.

It is open on Thursday and Friday, December 6 and 7 from 10am to 6pm; on Saturday, December 8 from 9am to 6pm and on Sunday, December 9 from 10am to 5pm.

Admission is £5 for adults, £3.50 for children under 16 with £1 off advance tickets. A pre-paid family ticket covering two adults and two children is available for £12. Ticket hot line for credit card bookings is 051-357 1736.

## Time for a green re-ink

THERE are two things you should think of every time you throw away a printer ribbon. The first is that you are not throwing it away because it is worn out, merely because it has run out of ink.

The second is that consequently you are wasting energy, resources and being a bit unfriendly towards mother nature.

The first of these problems has been solved before. Re-ink your ribbon. The fabric is good for several complete re-inks depending on your printer and exactly what you use it for. Needless to say that compared to the price of a new ribbon a bottle of re-inking fluid is virtually free.

Unfortunately, up until now the re-inking fluid on the market has been manufactured into ozone-depleting aerosols. This is a Bad Thing.

But now help is at hand.



Re-Ink's creator Simon Caspell

The new product goes by the catchy and imaginative name of "RE-INK" and employs a pump action process to deliver the ink to where it is needed.

A can of this wonder potion can bring back to life more than 30 ribbons, leav-

ing them looking as good as new and depriving the local land-fill site of a few miles of perfectly servicable ribbon fabric.

To find out more, or just to congratulate these fellows, contact Office 21 on 0202 669777



# ANNOUNCING THE A5000

**FREE**  
INFORMATION PACK  
TELEPHONE  
(0933) 650677



IS YOUR AMIGA STILL IN THE STONE AGE?

## "UNLEASH THE POWER OF YOUR AMIGA"

▼ JUST ADD TO YOUR AMIGA FOR ▼

- *Faster than the Commodore A3000* ●
- *600% Faster than your Amiga* ●
- *Massive 4Mb of superfast memory* ●
- *100% Software Compatibility* ●
- *Plug-in upto a 50 MHz Maths Co-Pro* ●
- *Advanced 32-bit design* ●
- *32-bit Kickstart – Six times Faster* ●
- *Three models – 16.67/20/25 MHz* ●

### ● THE MACHINE ●

CPU: 16.67 MHz Asynchronous MC68020RC16 2-3 MIPS (8 MIPS peak)  
FPU: 12.5 MHz – 50 MHz Asynchronous MC68881RC or MC68882RC  
RAM: 4 Megabytes of 32-bit zero-wait-state 256 x 4 80ns DRAMs  
SHADOW ROM: Move your Kickstart into 32-bit SUPER-FAST-RAM  
SOFTWARE: 68000 Fallback mode for 100% software compatibility  
HARDWARE: 100% compatible with Amiga 500/2000 and add-on cards  
INTERFACE: Plugs into 68000 processor socket inside your Amiga

68881 – £99 1 Mb RAM – £69

## £399

(INC VAT & DELIVERY)

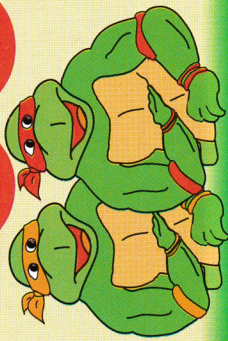
BASIC MODEL – 68020 (16 MHz) + 1 Mb RAM



SOLID STATE LEISURE LIMITED



# GORDON HARWOOD



## Bring you "Heroes in a Half Shell"™

### Amiga POWERPLAY

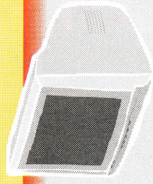
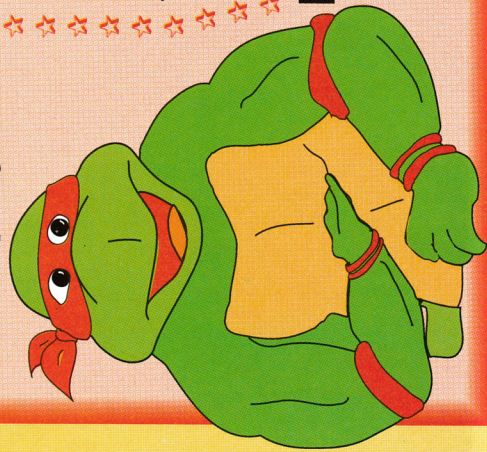
#### Raphael's PACK 1

THAT'S RIGHT HARWOODS HAVE PUT TOGETHER THE ULTIMATE PACKS YET AGAIN  
STARTING WITH RAPHAEL'S AMIGA PACK 1 WITH 15 GREAT GAMES!

Just look at  
what you get...

- ★ AMIGA A500 COMPUTER (See standard features list at bottom of this page)
- ★ TEENAGE MUTANT HERO TURTLES ★ PLUS 10 MORE GREAT GAMES...
- ★ SHADOW OF THE BEAST II ★ Datastorm ★ Drivin Force
- ★ DAYS OF THUNDER ★ Dungeon Quest ★ Pipemania
- ★ BACK TO THE FUTURE II ★ E-Motion ★ Rock 'N' Roll
- ★ NIGHT BREED ★ Grand Monster Slam ★ Skweek
- ★ MICROSWITCHED JOYSTICK ★ RVF Honda ★ Tower of Babel
- ★ TAILORED DUST COVER ★ AND...DELUXE PAINT II ★
- ★ 10 BLANK 3.5" DISKS ★ ... You won't need anything else for ages!
- ★ DISK STORAGE CASE ★
- ★ MOUSE MAT ★

**RAPHAEL'S PACK**  
**PRICED AT AN**  
**INCREIBLE...**



### Amiga MONITORS

**PHILIPS CM 8833 STEREO COLOUR MONITOR** **COMMODORE 1084S STEREO COLOUR MONITOR**

**Stereo High Resolution Colour Monitor**

- SCART Euro-connector fitted as standard
- RGB/Al, TTL, Comp. Video & stereo audio inputs
- Can also be used as a TV with tuner or VCR
- Features fold down tilt-stand
- Twin Speakers
- FREE lead for computer of your choice
- FREE 12 Month on site service warranty.

**Stereo High Res. Colour Monitor**

- RGB/Al/TTL, Comp. Video/Audio Inputs
- Can be used as TV with a tuner or VCR
- Twin Speakers for stereo output
- Supplied with cables for A500, CGA PC, C16-64-128

*All Monitors are supplied with a Free Tailored Dust Cover!*

**£249\***

**£259\***

### Amiga STORAGE

**COMMODORE A590 20Mb HARD DISK DRIVE FOR AMIGA A500... WITH FREE 1Mb MEMORY UPGRADE**

Commodore's own hard drive for the A500

- Autoboot with Kickstart 1.3
- Sockets for up to 2Mb RAM expansion
- DMA access
- External SCSI port
- SUPPLIED WITH A FREE 1Mb MEMORY EXPANSION

*Super Low Price...*

**1Mb**

**£399\***

**COMMODORE A590 2Mb HARD DISK DRIVE FOR AMIGA A500, UPGRADED TO 2Mb, FITTED AND READY TO USE**

**EXTERNAL FLOPPY DISK DRIVES** with the following standard features...

- Disable switch
- Thoroughport
- Access light
- Whisper quiet
- For A500/1000/2000/3000

**CUMANA CAX 354 3.5" SECOND DRIVE**

**HARWOODS SUPERSLIM 3.5" SECOND DRIVE**

- With EXTRA Long Cable

**£399\***

**£74.95\***

**£59.95\***



Amiga

## POWERPLAY

### Leonardo's PACK 2

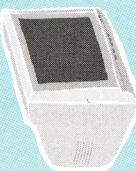
PACK 2 COMES TO YOU FROM LEONARDO AND INCLUDES THE FOLLOWING...

#### RAPHAEL'S BRILLIANT AMIGA PACK 1

The fantastic Amiga and ALL THE EXTRA'S detailed in Raphael's Powerplay Pack 1 above, AND then you also get...



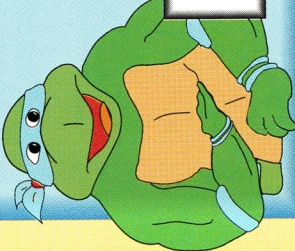
#### THE BRILLIANT PHILIPS CM8833 STEREO COLOUR MONITOR



Twin Stereo Speakers, Green Screen Switch, Lead to Amiga, Free Tailored Dust Cover and 12 Months on-site warranty (See monitor panel for details)

A SPECIAL PACK FROM LEONARDO TO LET YOU SEE THOSE GAMES WITH SUPERB CLARITY AND IN FANTASTIC STEREO FOR ONLY...

**£629\***



### ALL OUR AMIGA'S INCORPORATE... The following Standard Features

- ☐ 512K RAM
- ☐ 1Mb Disk Drive
- ☐ TV Modulator
- ☐ 4096 Colours
- ☐ Multi-Tasking
- ☐ Speech Synthesis
- ☐ Mouse
- ☐ 3 Operation Manuals
- ☐ Workbench 1.3 Disks
- ☐ Tutorial Disk
- ☐ Kickstart 1.3
- ☐ Built-in Connecting Cables
- ☐ All Connecting Cables

...AND ALL PRICES INCLUDE VAT AND STANDARD POSTAL DELIVERY SERVICE

Amiga

## POWERPLAY

### Donatello's PACK 3

PACK 3 COMES TO YOU FROM DONATELLO AND INCLUDES THE FOLLOWING...

#### RAPHAEL'S BRILLIANT AMIGA PACK 1

The fantastic Amiga and ALL THE EXTRA'S detailed in Raphael's Powerplay Pack 1 above, and then you also get...

#### THE BRILLIANT PHILIPS CM 8833 STEREO COLOUR MONITOR

With FREE Dust Cover and Cable to your Amiga and including a 12 Months on-site warranty (See monitor panel for details)

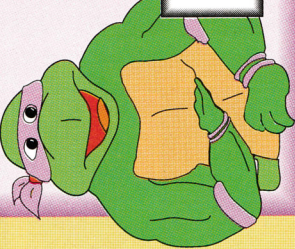
#### THE BRAND NEW STAR LC200 COLOUR PRINTER...

150/40 cps, Full Colour 9 Pin NQ Dot Matrix Printer with FREE Dust Cover and cable to your Amiga (See printers on page 3 for further details)

(Or choose an alternative from our range & adjust by the difference in price)

A SPECIAL MONITOR AND PRINTER PACKAGE FROM DONATELLO TO SET YOU UP COMPLETELY AND ALL AT A PRICE THAT'S GOT REAL TURTLE POWER...

**£829\***



Amiga

## POWERPLAY

### Michaelangelo's PACK 4

PACK 4 COMES FROM MICHAELANGELO AND INCLUDES THE FOLLOWING...

A MORE SERIOUS PACKAGE ASSEMBLED BY MICHAELANGELO AND INCLUDING ALL THE FOLLOWING...

#### AMIGA A500 COMPUTER

TEENAGE MUTANT HERO TURTLES PUBLISHERS CHOICE (DTP inc. Kindwords)

#### MIDI-MASTER INTERFACE

DR. T's MIDI RECORDING STUDIO

#### BBC BASIC EMULATOR

MAXIPLAN 500 SPREADSHEET

SUPERBASE PERSONAL DATABASE

AMIGA LOGO ★ F18 INTERCEPTOR

FULLY MICROSWITCHED JOYSTICK

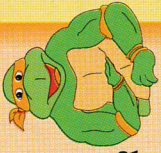
TEN BLANK 3.5" DISKS & DISK WALLET

#### PLUS... TEN GREAT GAMES

Darius, Dungeon Quest, E-Motion, Grand Monster Slam, R/VF Honda, Drivin Force, Pipemania, Rock 'N' Roll, Skweek, Towers of Babel,

**BUILD YOUR OWN PACK...**  
PACK 5-As above with CM8833  
PACK 6-As Pack 5 + LC200 Col. Printer **£779**  
PACK 7-As Pack 5 + LC200 Col. Printer **£979**  
(Or choose an alternative from our range & adjust by the difference in price)

MICHAELANGELO'S SPECIAL PACK AT A SPECIAL PRICE OF JUST...  
**£549\***



Amiga

## POWERPLAY

### Harwood's PACK 7

PACK 7 COMES TO YOU FROM HARWOODS AND INCLUDES THE FOLLOWING...

A PROFESSIONAL PACKAGE PUT TOGETHER FOR THE BUSINESS MINDED AMIGA USER



AMIGA A500 COMPUTER  
(See Standard Features List)

PHILIPS CM 8833 STEREO COLOUR MONITOR

NEW STAR LC200 9 PIN NQ FULL COLOUR PRINTER

(Or choose an alternative from our range, and adjust by the difference in price)

A WHOLE HOST OF BUSINESS SOFTWARE AND QUALITY ACCESSORIES...

- ★ PROTECT V 4.2 (W/Proc.)
- ★ SUPERBASE II (D/Base)
- ★ TUTORIAL DISK
- ★ DELUXE PAINT II
- ★ DAYS OF THUNDER
- ★ BACK TO THE FUTURE II
- ★ SHADOW OF THE BEAST II
- ★ NIGHT BREED
- ★ MICROSWITCHED JOYSTICK
- ★ 10 BLANK 3.5" DISKS
- ★ DISK LIBRARY CASE
- ★ MOUSE MAT
- ★ 3 DUST COVERS

WE MEAN BUSINESS AT ONLY...  
**£859\***

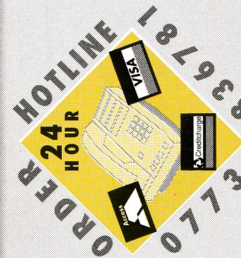


### \* FINANCE FACILITIES

Finance with or without a deposit, can be tailored to suit your needs. Gordon Harwood Computers offer facilities to purchase using our budget account scheme. APR 36.8% (Variable). Available to most adults of eighteen years or over, subject to status.

Simply phone or write and we will send you written details along with an application form. Applications, required in advance, available to full time U.K. mainland residents and overseas British armed forces personnel.

Written quotations available on request.



Please see page 4 for our easy ordering procedures. Just compare the service we offer!

**GORDON HARWOOD HARWOOD HARWOOD**  
*Computers*

GORDON HARWOOD COMPUTERS  
DEPARTMENT ACO/C2, NEW STREET  
ALFRETON, DERBYSHIRE, DE5 7BP  
TEL: 0773 836781 FAX: 0773 831040



# PRINTERS

Free... Fully Tailored to Dot Matrix Printers

## All printers in our range include the following features...

Standard Centronics parallel port unless otherwise stated for direct connection to Amiga, PC's, ST etc. and comes with a... FREE CONNECTOR LEAD AND TAILORED DUST COVER

All the characters Per Second speeds quoted below are Draft/10 at 10dpi

## NEW STAR LC 200 RANGE OF PRINTERS AVAILABLE NOW!

All the new printers in the LC200 range have the following features...

- ☐ 80 Column Dot Matrix
- ☐ Push and Pull Tractor Feeds
- ☐ Rear and Bottom Feeds
- ☐ Programmable from front panel, no dip switches
- ☐ Micro paper feed
- ☐ Reverse paper feed
- ☐ Paper park with Auto Single
- ☐ Sheet Paper Loading
- ☐ 12 Month Warranty

### STAR LC200 GREAT NEW COLOUR PRINTER - 185/40 cps £209.95

- ☐ This is the one in our packs!
- ☐ 240 dpi - 9 Pin COLOUR
- ☐ Massive 16K Buffer
- ☐ 8 Resident Fonts
- ☐ Front Panel Pitch Selection
- ☐ Max. paper width 11.7"
- ☐ Supplied with colour & mono ribbons
- ☐ Faster than the old LC10 Colour bar
- ☐ still at the same competitive price

### STAR LC24-200 NEW 24 PIN MONO PRINTER - 220/55 cps £259.95

- ☐ New Star 24 pin that means business!
- ☐ 360 dpi - 24 Pin MONO
- ☐ 7K Buffer expandable to 39K
- ☐ 10 Resident Fonts
- ☐ Front Panel Pitch Selection
- ☐ Max. paper width 11.7"
- ☐ Supplied with mono ribbon
- ☐ Faster than the old LC24-10
- ☐ Extra font cartridges available

### STAR LC24-200 NEW COLOUR PRINTER - 220/55 cps £299.95

- ☐ Colour version of the new LC24-200 Mono
- ☐ 360 dpi - 24 Pin COLOUR
- ☐ 30K Buffer expandable to 62K
- ☐ 10 Resident Fonts
- ☐ Front Panel Pitch Selection
- ☐ Max. paper width 11.7"
- ☐ Supplied with colour & mono ribbons
- ☐ Better quality than LC200 colour
- ☐ Extra font cartridges available

### STAR LC10 - Up to 120/25 cps

- ☐ Our most popular Mono Dot-Matrix printer and at a super low price
- ☐ Multiple font options easily accessible
- ☐ Simultaneous, continuous and single sheet stationery
- ☐ Excellent paper handling facilities
- ☐ 240 x 240 dpi Graphics

### STAR LC 24-10 - Up to 180/60 cps

- ☐ 24 Pin version of the Star LC Series with
- ☐ Exceptional letter print quality
- ☐ 360 x 360 dpi Graphics
- ☐ Additional font cartridges available
- ☐ 8 resident fonts

### STAR XB PRINTER RANGE Up to 240/80 cps - £239.95

- ☐ 24 x 48Pin super letter quality fonts
- ☐ 24 x 24Pin super letter quality fonts
- ☐ Huge 27K buffer expandable to 187K
- ☐ 360 x 360 dpi Colour Graphics
- ☐ 12months on-site warranty (UK Mainland)

### 24-10 Col. £479.95

- ☐ Two very fast LQ 24Pin Colour Printers
- ☐ (15" Wide Carriage versions 41 exp. to 201K buffer)
- ☐ Exceptional print quality
- ☐ 4 x 48Pin super letter quality fonts
- ☐ 24 x 24Pin super letter quality fonts

### 24-15 Col. £619.95

- ☐ Huge 27K buffer expandable to 187K
- ☐ 360 x 360 dpi Colour Graphics
- ☐ 12months on-site warranty (UK Mainland)

### STARSCRIPT - 8ppm POSTSCRIPT LASER £1995.00

- ☐ Up to the minute technology Laser Printer
- ☐ 300 DPI, 2Mb. Upgradable to 5Mb.
- ☐ Serial/Parallel printer interface built-in
- ☐ Emulations inc. HP Series II, Epson
- ☐ EX800, IBM Proprinter & Diablo 630
- ☐ Every desktop publishers dream

### HEWLETT PACKARD PAINTJET A4 £899.00

- ☐ Best quality full colour printer at a realistic price
- ☐ Parallel, Centronics or Serial RS232 C (please specify with order)
- ☐ For presentation graphics, CAD and technical/scientific applications
- ☐ Full page colour of graphics on paper in 4 minutes (typical)
- ☐ Non impact printing
- ☐ Will print transparencies
- ☐ 12 Months on-site warranty (UK Mainland)

# AMIGA GRAPHICS AND SOUND

## NEW DISNEY ANIMATION STUDIO SOFTWARE

Full featured state of the art animation program. Gives you the ability to create full length Disney style animated sequences (1 Mb recommended).

### MASTERSOUND £99.95

High quality 'Mono' Sampler. Mono samples are better than stereo when sampling instruments for your own music with soundtracker etc.

### PERFECT SOUND V.3 £33.95

Latest version of this superb stereo sampler. Stereo samples give better quality when used as sound effects with animations etc.

### AMAS £64.95

Combined stereo sampler and midi interface. Samples in Mono or Stereo.

### MIDI INTERFACE (5 PORT) £74.95

In, Out, Through + 2 Switchable Through/Out inc Cable

### MUSIC 'X' Full Version Software £24.95

Including Midi Interface as detailed above.

### AUDIOMASTER II £89.95

High quality sampling software. The Professionals Choice

### DIGIVIEW GOLD V.4 (inc Cable & Digipaint II) £64.95

Digitalises static images in black & white or FULL COLOUR (Using filters provided). All resolutions supported (memory permitting). Creates IFF & HAM files. Uses B&W (or colour with B&W Mode) video cameras

### VIDI with Vidichrome B/W Grabber colour digitiser £99.95

Grabs black & white frames (in grey scales). 5-6 frames per second. Will store as many frames as you have RAM (16-20 on 1Mb, 60 with 3 Mb) Inc. FREE Vidichrome colour digitising software (worth £19.95) & cables

### COLORPIC...The best colour grabber by far! £439.95

Instant colour frame grabbing from moving video. Capture superb digitised video images in a range of resolutions from standard composite video source eg domestic TV video rec. or camera in a 50th of a second.

### RENDALE 8802 Including Cables & Deluxe Video Animation Software £189.95

Home/Xemi Pro standard, allows computer display to be mixed with any incoming composite video signal

### PODS CAT 12" x 12" Graphics Tablet complete £219.95

Supplied with driver software, it replaces your mouse and thus works with ALL applications software. Also available for IBM PC & Compatibles

# ACCESSORIES

## 3.5" DISK HEAD CLEANER £2.99

Essential maintenance for your disk drive. Keep clean and trouble free.

## DISK STORAGE BOXES

- 40 Piece Only £5.95
- 80 Piece Only £7.95
- 100 Piece Only £8.95
- Boxx 100 Piece drawer type stackable Only £11.95
- Posso 150 Piece drawer type stackable Only £17.95

# ORDERING MADE EASY

Before you choose from whom to purchase, please give us a call. We are always more than happy to discuss your requirements, and answer any queries you may have...

**ORDER BY PHONE:** Phone our Order Hotline with your Mastercard, Access, Visa or Lombard Charge Card quoting number & expiry date.

**ORDER BY POST:** Make cheques, bankers-building society drafts or postal orders payable to GORDON HARWOOD COMPUTERS. (Personal or business cheques take 7 days to clear from day of receipt before your order is despatched)

Please send Name, Address, and most importantly if possible, a Daytime Telephone Number along with your order requirements. Please check you are ordering from one of our latest advertisements before posting (phone if you require confirmation). Please remember that for example many September publications appear during August, therefore prices you see may have changed (either up or down).

**FREE POSTAL DELIVERY:** Goods in UK Mainland (5-7 day delivery).

**OR COURIER SERVICE:** Add £5 per major item for next working day delivery, UK Mainland most regions.

(Goods normally despatched on day of ordering or payment clearance)

**EXPORT ORDERS:** Most items are available at TAX FREE PRICES to non UK residents when visiting us or for export shipment. Please contact us for ordering information.

**REMEMBER AFTER YOU'VE BOUGHT FROM HARWOODS, WE'LL STILL BE HERE...**

**TECHNICAL SUPPORT:** You will be given our Exclusive Technical Support Phone Number to call should you require any help or advice on any aspect of the system you have purchased.

**12 MONTH WARRANTY:** Items proving faulty within 30 days of purchase are replaced with NEW UNITS unless otherwise stated. For the whole guarantee period, warranty service will be completely FREE OF CHARGE, and a FAST turnaround is GUARANTEED by our OWN ENGINEERS!

**COLLECTION FACILITY:** Any computer, monitor or printer requiring warranty service can be collected from your home FREE OF CHARGE during the guarantee period (UK Mainland only)

**FULL TESTING PROCEDURE:** All computers are tested prior to dispatch, and all items are supplied with mains plug and leads as required - just connect up and use straight away.

**REMEMBER WE'RE NOT JUST ANOTHER MAIL ORDER COMPANY...**

All listed prices are what YOU PAY, and there are NO HIDDEN EXTRAS. VAT and postage are included, and prices are correct at time of going to press (Pack details may vary from time to time). Offers are subject to availability and to being the latest advertised packs and prices. Our offers are NOT supplied on a trial basis. E&OE

**\* FINANCE FACILITIES** Finance with or without a deposit, can be tailored to suit your needs.

Gordon Harwood Computers offer facilities to purchase using our budget account scheme. APR 36.8% (Variable). Available to most adults of eighteen years or over, subject to status.

Simply phone or write and we will send you written details along with an application form. Applications, required in advance, available to full time U.K. mainland residents and overseas British forces personnel.

Written quotations available on request.

If you are already the holder of a Lombard Credit Charge Card you can use this to purchase from us (subject to your personal card limit)

# VISIT OUR NEW SHOWROOM

Please pay us a visit where our full range of advertised products, AND MORE, is on sale. 'ALL UNDER ONE ROOF', in the pleasant surroundings of our new purpose fitted showroom. There's plenty of parking close by.







# LOOK!

NO HIDDEN EXTRAS, THE PRICE YOU SEE IS THE PRICE YOU PAY. ALL PRICES INCLUDE VAT & 1st CLASS DELIVERY



081-744 3087/1834 (Mon-Sat 10-6)



DISK	Maxell, Sony, 3M Dysan Verbatim		100% Certified Error Free (prices include labels)	
	BRANDED		BULK	
	DSDD 720k	DSHD 1.4M	DSDD 720k	DSHD 1.4M
10	£9.95	£24.95	£5.95	£13.95
20	£18.95	£44.95	£11.50	£24.95
50	£46.95	£119.95	£27.00	£64.95
100	£89.95	£229.95	£49.95	£119.95

AMIGA BOOKS	
Advanced Amiga BASIC.....	£17.95
Amiga 3D Graphics Prog BASIC.....	£17.45
Amiga Applications.....	£13.95
Amiga Assembly Lang Prog.....	£13.45
Amiga BASIC Inside & Out.....	£17.95
Amiga C Advanced Programmers.....	£31.45
Amiga C For Beginners.....	£17.45
Amiga DOS.....	£13.95
Amiga DOS Inside & Out.....	£17.45
Amiga DOS Manual.....	£21.95
Amiga DOS Quick Reference.....	£7.95
Amiga DOS Ref Guide.....	£13.95
Amiga DOS Inside & Out.....	£17.45
Amiga For Beginners.....	£11.95
Amiga Gd Graphics Sound Teleco.....	£16.45
Amiga Handbook.....	£14.95
Amiga Hardware Ref Manual.....	£20.95
Amiga Machine Lang Guide.....	£20.95
Amiga Machine Language.....	£13.95
Amiga Microsoft BASIC Prog Gde.....	£17.45
Amiga Prog Handbook Vol 1.....	£22.95
Amiga Prog Handbook Vol 2.....	£22.95
Amiga Programmers Guide.....	£16.45
Amiga ROM Kernel Ref Man Annot.....	£27.95
Amiga ROM Kernel Ref Man Lib.....	£31.95
Amiga Systems Programmers Guide.....	£31.95
Amiga Tricks & Tips.....	£13.95
Becoming an Amiga Artist.....	£17.45
Beginners Guide to the Amiga.....	£15.95
Computer's 1st Book of Amiga.....	£15.95
Computer's 2nd Book of Amiga.....	£15.95
Elementary Amiga BASIC.....	£13.95
Inside Amiga Graphics.....	£15.95
Inside the Amiga with C 2nd Ed.....	£19.95
Kickstart Guide to the Amiga.....	£12.95
Kids & The Amiga.....	£14.95
More Tips & Tricks For Amiga.....	£17.45
Programmers Guide to the Amiga.....	£22.95
Amiga Graphics Inside & Out.....	£31.45

Postal Orders to:

## A to Z Computer Services

49 Heath Road, Twickenham, Middlesex TW1 4AZ.

Faxline: 081-891 6260

### RIBBONS ■ HIGHEST QUALITY GUARANTEED ■ F = Fabric C = Carbon Multi-Strike

AMSTRAD		1+	3+	CENTRONIC		1+	3+	JUKI		1+	3+	QUIME		1+	3+
DMP2000/3000 (F)	£3.50	£3.00	£3.00	GLP HP80, 156 (F)	£3.95	£3.50	£3.50	6100 (C)	£2.95	£2.50	£2.50	Sprint 35, I, II, III (F)	£4.95	£4.50	£4.50
DMP1600/2500 (F)	£3.50	£3.00	£3.00	COMMODORE				6200, 6300, 6500 (C)	£3.95	£3.50	£3.50	Sprint 35, I, II, III (C)	£4.95	£4.50	£4.50
DMP4000 (F)	£5.45	£5.00	£5.00	MPS801 (F)	£3.95	£3.50	£3.50	MT80/Sprint (F)	£3.95	£3.50	£3.50	Sprint 79/101/114, IV (F)	£4.95	£4.50	£4.50
LQ3500 (F)	£3.45	£3.50	£3.50	MPS802, 2022 (F)	£3.95	£3.50	£3.50	MT80/Sprint (C)	£3.95	£3.50	£3.50	Sprint 79/101/114, IV (C)	£4.95	£4.50	£4.50
LQ3500 (C)	£3.75	£3.50	£3.50	MPS803 (F)	£3.95	£3.50	£3.50	MT88/88 (F)	£5.45	£5.00	£5.00	SEIKOSHA			
LQ5000 (F)	£8.95	£8.50	£8.50	DIABLO				PC2200 (F)				GP80 (F)	£3.95	£3.50	£3.50
BROTHER				HTII, 1345, 1355 (F)	£3.95	£3.50	£3.50	PC8023 (F)	£4.45	£4.00	£4.00	GP100/250X (F)	£3.95	£3.50	£3.50
HR1520/1025/95 (F)	£3.95	£3.50	£3.50	HTII, 3000, 3200 (C)	£3.95	£3.50	£3.50	Pinwriter P3/P7 (F)	£5.95	£5.50	£5.50	SHINWA			
HR1520/1025/95 (C)	£3.95	£3.50	£3.50	EPSON				Pinwriter P5/9XL (F)	£5.95	£5.50	£5.50	CP80/808/CTI (F)	£3.95	£3.50	£3.50
M1009/1109 (F)	£3.95	£3.50	£3.50	LX80/86/90 (F)	£3.95	£3.50	£3.50	Pinwriter P5/9XL (F)	£5.95	£5.50	£5.50	CP80/808/CTI (C)	£3.95	£3.50	£3.50
M1409 (F)	£4.95	£4.50	£4.50	LX8001/0500/800/850 (F)	£4.45	£4.00	£4.00	P6-177 (F)	£5.95	£5.50	£5.50	STAR			
M1509/1709/1724 (F)	£4.95	£4.50	£4.50	MX80/FX80/85/86/90 (F)	£3.95	£3.50	£3.50	PANASONIC				LC24-10 (F)	£3.95	£3.50	£3.50
CANON				MX100/FX100/LX1000 (F)	£4.95	£4.50	£4.50	KXP 109/108 1124/159 (F)	£3.95	£3.50	£3.50	LC24-10 (F)	£4.95	£4.50	£4.50
A1250/40/AP1200 (F)	£3.95	£3.50	£3.50	QX100/1050/ERC-20 (F)	£4.95	£4.50	£4.50	KXP 1124/159 (F)	£3.95	£3.50	£3.50	NB24-10/ND10/LN10 (F)	£4.45	£4.00	£4.00
PW1080/PW1156				LQ2500/EX800/3X1000				QUENDATA				NB24-10/ND10/LN10 (F)	£4.45	£4.00	£4.00
CITIZEN				(13mm) (F)	£5.45	£5.00	£5.00	DMP310/DP80/100 (F)	£4.50	£4.00	£4.00	TAXAN KAGA			
120D (F)	£3.95	£3.50	£3.50	LQ1500/LP1500 (F)	£5.45	£5.00	£5.00					810/815/910/915 (F)	£3.95	£3.50	£3.50
180E (F)	£3.95	£3.50	£3.50												

Commodore Amiga TV Modulator.....	£13.95
Amiga A501 Ram Pack (Commodore	
Original, Clock & Calendar.....	£85.95
Microbot M501 1/2 Meg Ram Pack	
(Clock & Calendar included).....	£49.95
Amiga Power Supply Unit.....	£49.95
Amiga External Disk Drive	
(NEC/TEAC/CITIZEN).....	£65.00
3.5in Disc Drive Head Cleaning Kit	
(Deluxe Version).....	£3.95
Dust Cover for Amiga Keyboard.....	£3.95
Dust Cover for Philips Monitor CM8833	
& Commodore 1084.....	£3.95

### MOUSE

Amiga Mouse (Commodore Original).....	£24.95
Amiga Contriver Mouse.....	£22.95
Naksha Mouse (Upgrade Version).....	£29.95
Mouse Mat (Thick Rubber).....	£4.95

### JOYSTICKS

Competition Pro.....	£13.95
Competition Pro Extra.....	£15.95
Quick Joy Jet Fighter.....	£12.95
Speed King (w/Auto Fire).....	£12.95

### LOCKABLE STORAGE BOXES

3.5" 50 cap.....	£7.00
3.5" 80 cap.....	£8.00
3.5" 80 cap Banx Box	
(stackable, drawer type).....	£9.95

### CABLE & CONNECTORS

Monitor Lead (D23F - Scart).....	£14.95
Printer Cable Parallel (D25M CEN36M).....	£7.95
Null Modem Cable (D25 MM, MF, FF).....	£14.95
D23 M or F with Cover.....	£3.95
7 Core Screened Cable (PFRM).....	£2.00
Scart 21 Plugs.....	£2.00
Twin Phone Plug with Cable (1M).....	£2.00

\* Prices are for MAIL ORDER only and subject to change without notice.

\* Education, Govt. Authority Official order welcome (Min. £50)

Richard & Angela Hows, Applied Research Kernel  
Corve Farmhouse, Corve Lane, Chale Green, Ventnor, PO38 2LA, U.K.

Visitors are most welcome by appointment

Post: UK £0 (1st Recorded), Special Delivery £2.99 (call before 1pm), Securicor £6.90 (call before 1pm).  
Registered Air Mail to Europe £5/Item, World £12/Item. Please call about carriage on heavy items.

VAT: Prices include U.K. V.A.T. at 15% except for books. Books are zero rated.

CHEQUES: London Sterling Payable to A.R.K. please. High value ordinary cheques may require clearance.

EXPORT & BFPO: Remove U.K. V.A.T. (=Price/1.15) except on books which are zero rated.

AVAILABILITY: Most items listed are in stock. Others can usually be obtained within 48 hours.

DESPATCH: Within 24 hours on stock items, 48 hours on non-stock but available items.

PRICES: May occasionally be subject to change.



TEL: 0983 79496

Switchable voice/fax line open between 10.00am and 6.30pm Monday to Saturday

### ACCOUNTS

Arena Int. Accounts.....	119.83
Cashbook Combination.....	49.91
Cashbook Controller.....	36.80
Desk Top Budget.....	34.96
EasyLedgers Integrated.....	149.96
Home Accounts.....	23.92
Personal Tax Planner.....	34.96
Personal Accounts Plus.....	29.90
Service Industry Accounts.....	299.92
SBA Cash.....	54.97
SBA Xtra.....	79.81
System 3.....	44.85

### BOOKS

1st Book of Amiga.....	16.95
2nd Book of Amiga.....	16.95
3D GFX Programming Basic.....	18.45
68000 Assembly Language.....	24.95
68000 Asm Lan Programming.....	24.95
Amiga Adv Sys Progs Guide.....	32.95
Amiga Basic Inside & Out.....	18.95
Amiga C For Adv Progs.....	32.95
Amiga C For Beginners.....	18.45
Amiga Desktop Video Guide.....	18.45
Amiga Disk Drives In & Out.....	27.95
Amiga For Beginners.....	12.95
Amiga Graphics In & Out.....	32.45
Amiga Machine Language.....	17.95
Amiga Progs Handbook Vol 1.....	24.84
Amiga System Progers Guide.....	32.95
Amiga Tricks And Tips.....	14.95
AmigaDOS Inside & Out.....	18.45
AmigaDOS Reference Guide.....	14.95
AmigaDOS Quick Ref Guide.....	8.95
Hardware Reference Manual.....	21.95
Inside Amiga Graphics.....	16.95
Kickstart Guide To Amiga.....	14.95
Kids And The Amiga.....	15.95
Machine Lang For Beginners.....	19.95
Mapping The Amiga.....	24.95
More Tricks And Tips.....	18.45
Progers Guide To The Amiga.....	23.92
ROM Kernel Incs & Docs.....	28.95
ROM Kernel Libs & Devs.....	29.95

### CABLES AND CONNECTORS

Amiga To Z88 Link.....	34.96
Cable D25P-D25P 9W 2M.....	10.81
Cable D25S-D25P 9W 2M Mdm.....	10.81
Cable D25P-D25P 25W 3M.....	12.88
Cable D25P-D25P 25W 3M.....	18.86
Cable D25P-C36P 2M Printer.....	6.90
Cable D25P-C36P 5M Printer.....	14.95
Cable D25P-D25P 25W 5M.....	21.85
Cable D25P-C36P 3M Printer.....	11.96
Cable D25P-D25S-D25P/D25S.....	23.92
Cable DIN5P-DIN5P MIDI.....	4.83
Cross Over Box D25.....	34.96
Gender Changer, Male-Male.....	8.05
Gender Changer, Fml To Fml.....	8.05
Monitor Cable To NEC Multi.....	14.95
Monitor Cable To Open End.....	10.81
Monitor Cable To Scart.....	13.80
Plug 23 Pin D With Hood.....	4.83
Plug 25 Pin D With Hood.....	4.83
RS232 Mini Tester.....	12.88
RS232 Null Modem.....	8.97
RS232 Patch Box.....	12.88
Socket 23 Pin D With Hood.....	4.83
Socket 25 Pin D With Hood.....	4.83
Switch Box D25S 2 Way.....	24.84
Switch Box C36S 4 Way.....	39.79
Switch Box D25S 4 Way.....	36.80

### COMMUNICATIONS

A Talk 3.....	69.92
K Comm 2.....	24.84
Paragon BBS.....	109.94

### COMPUTER AIDED DESIGN

Design 3D 1MB.....	57.96
Professional Draw 2.....	99.82
UltraDesign.....	239.89
X Cad Designer.....	79.81
X Cad Professional 1.5MB.....	339.94

### DATABASE MANAGERS

Mailshot Plus.....	37.95
Microfiche Filer.....	54.90
Prodata.....	59.87
Superbase Personal.....	29.90
Superbase Professional.....	164.91
Superbase Personal 2.....	59.80
Who What When Where.....	29.90

### DESKTOP PUBLISHERS

Clip Art (7 PD Disks).....	14.95
Gold Disk Type: DTP.....	34.96
E Clips Structured Art.....	69.92
Mistpiece Fonts.....	129.95
Outline Fonts.....	99.82
Pagesetter 2 1MB.....	49.91
Pagesetter 1MB.....	129.95
Professional Page 1.5MB.....	159.85
Structured Clip Art.....	36.80

### EDUCATION

GCSE Tutors.....	24.84
My Paint.....	34.96

### EDITORS

CygnusEd Professional 2.....	64.86
------------------------------	-------

### EMULATORS

A Max 2.....	Query
BBC Emulator.....	34.96
Power Board IBM Emulator.....	319.93
Printercept Epson Emulator.....	34.96
Transformer IBM Emulator.....	Query

### GRAPHICS (Also See Video)

3D Professional.....	Query
Animation Studio (Disney).....	99.82
Art Department.....	79.81
Animagic Editor/Effects.....	59.80
C Light.....	39.79
Comic Strip.....	39.79
Deluxe Photolab 1MB.....	54.97
Deluxe Paint 3 1MB.....	57.96
Digi Paint 3.....	52.90
Elan Performer.....	44.85
Gold Disk Type: Artist.....	34.96
Gold Disk Type: Designer.....	34.96
Impact Presentations.....	49.91
Movie Strip.....	39.79
Outline Fonts.....	99.82
PageFlipper Plus Fx.....	69.92
PageRender 3D.....	79.81
Photon Paint 2 1MB.....	57.96
Pixmate.....	39.79
Real 3D Ray Tracing System.....	99.82

Real 3D Professional.....	279.91
Real 3D Turbo.....	349.83
Sculpt 3D XL.....	99.82
Scult Animate 4D.....	329.82
Sculpt Animate 4D Junior.....	84.87
Turbo Silver.....	99.82
Turbo Silver Terrain.....	18.86

### HARDWARE

1.3 Kickstart ROM.....	29.90
A4 Flat Bed Scanner.....	459.77
A590 20MB Hard Disk Drive.....	379.96
Disk Drive 5.25 Inch Ext.....	129.95
Disk Drive 3.5 Ext Plastic.....	59.80
Disk Drive 3.5 Ext Metal.....	64.86
Disk Drive 3.5 Int A2000.....	54.97
Fat Agnus.....	54.97
Podscat 12x12 Inch Tablet.....	199.87



## 2 Unkind

I HAVE just read the "Word Processing - Part 2" article in the September issue of *Amiga Computing* and was very surprised to find a review of KindWords 2 not included.

In the review of Scribble the article says "...the inclusion of a thesaurus. No similarly priced word processor has this facility." Wrong!

Kindwords has a 470,000 synonym English thesaurus, likewise a 100,000 word English dictionary, and apart from the fact you cannot have multiple files open, a facility I have not yet missed, I rate Kindwords better than Transcript or Scribble!

It is very easy to use. Although it does not use Amiga fonts it does come with 11 of its own including Greek (what use is that?) and a very wide set of printer drivers (including Superfonts to produce remarkable results on even a cheap 9 pin dot matrix printer). All in all lots of facilities on a three disk set with a nice manual.

I think the fact the Kindwords was not included was a serious omission to an otherwise excellent article or has the *Amiga Computing* team got something against Kindwords?

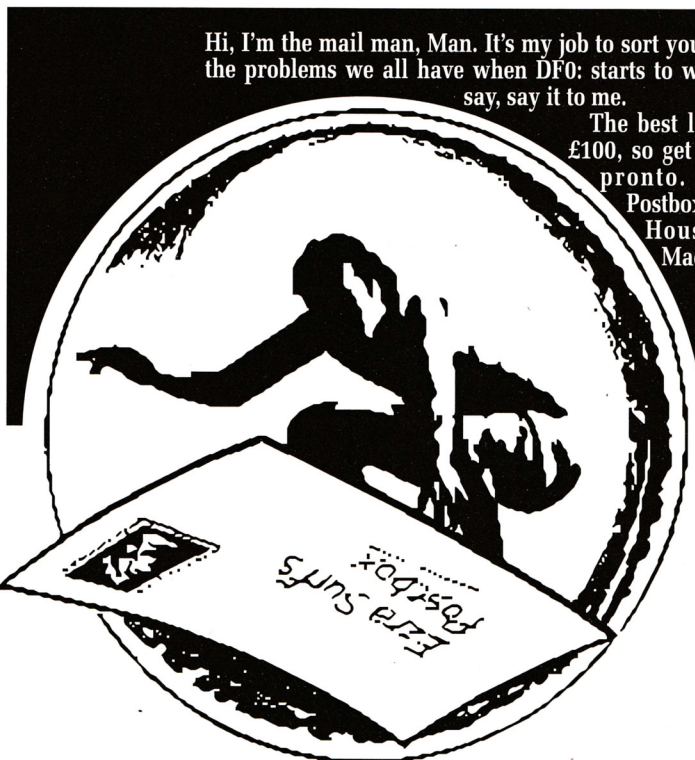
**David Sellwood,  
Warrington,  
Cheshire.**

No, we don't have anything against Kindwords. The reason we didn't include it in the word processing feature with the rest of the packages was because we didn't have a copy.

I know what you're thinking, pretty poor load of hacks that can't even be bothered to get hold of a few disks of software to review. Wrong.

We go out of our way to make sure every single feature in this magazine is extensively researched before you read it. The lack of information is just as serious as misinforming our readers.

There is nothing we would have liked more than to include the package you mentioned. We



Hi, I'm the mail man, Man. It's my job to sort your scribblin's and spill the beans on the problems we all have when DF0: starts to whirr. So if you've got something to say, say it to me.

The best letters will be sent prizes of up to £100, so get a copy of Protext into your drive pronto. Drop me a line at Ezra Surf's Postbox (ESP), Amiga Computing, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

**Ezra**

*attempted to obtain one through the distributors in this country. We called them up and they weren't available, we faxed them several times and got no reply.*

*As I said, we go out of our way, but there is a point at which that has got to stop. Short of buying the package in question there was no way it could be included.*

*So the answer to your question is that we wanted to review it, but the distributors didn't want us to. That's what happens in this business when you have a reputation for telling the truth.*

*I cannot comment on your opinions of Kindwords, because I've never seen it. The guys that put together that feature could have written a couple of hundred words on Kindwords from press releases and adverts, but unlike many other publications. We treat manufacturers' specifications with a good deal of healthy suspicion - I'm sure that's the way most of you prefer it.*

## Sense and sensibility

I BOUGHT our Amiga in June, I had a tape Amstrad before, and I'm really pleased with my choice. Since we bought it, my husband has got a half meg ram upgrade, a second disk drive, a stereo colour monitor (the music from Amiga is

fantastic) and a 24 pin colour printer.

My daughter uses the printer when she runs DeluxePaint II and has become really good processing quickly from white sheep with red wellies on.

My son on the other hand seems

to be great at mastering arcade games. I've got Home Accounts and have transferred all my accounts on to the disk and Kindwords which you have not featured in your article on wordprocessing.

It keeps saying that there are no spelling mistakes in the text even though I know I'm a lousey speller.

My husband likes to play Battle Chess because of the great effects and seeing what Workbench can do.

Myself, I love adventures though my mind doesn't seem as logical as the programmers! Anyway enough of us, you wanted some cut price projects. I'm going to try making

## Tough assignment

I HAVE been trying to install programs on my A590 hard drive (thanks to Diamond!) but when I click on the icon on some software - for example Kindwords and DeluxePrint - it asks for the disk which the program was copied from.

I am not experienced with CLI, but I have been able to use it to copy the programs to the hard drive. The assign command explained in the A590 manual does not seem to work. Am I doing something wrong?

Could you please give me a by-the-letter description of what to do. Hopefully this will help somebody else in the same situation.

Lets see some more mug shots of the team!

**Colin Morrison,  
Lisnaskea,  
Fermanagh,  
Northern Ireland.**

More mug shots? Are you mad?

*Circulation hasn't recovered since the last lot went in. Let's face it, Aj and Green are ugly. In fact, the only handsome chap is me, and they can't afford my fees.*

OK. The problem with some programs is that they always look for files on the original disk. To counteract this you must create a logical device on your hard disk with exactly the same name as the original disk.

For example, supposing you had bought the wordprocessor Ezraword form Ezrasoft. The disk would probably be called "EzraProg". Make a directory on your hard disk called Ezra. Then add the following line to your startup-sequence:

assign Ezraprog: dh0:Ezra

If you don't want to clog up your startup-sequence you can always type it in each time.



Presenting

# PROTEXT 5.0

Five years to the month after Protex version 1 was launched Arnor are pleased to present version 5, an enormous leap forward in both ease of use and performance.

Protex 5.0 introduces a completely integrated system of pull down menus and dialogue boxes. The menus are among the many operations that may now be carried out with either the mouse or the keyboard. Protex really does give you the best of both worlds.

Protex 5.0 handles printer fonts flexibly and accurately. You can make full use of any number of proportional printer fonts, mix them freely within any line, centre them in headers, use automatically formatted footnotes. And Protex correctly formats your text as you type it, no matter how many font changes you use, showing you line and page breaks exactly as they will be printed.

Protex 5.0 is still the fastest word processor around. Even though we have made all these major improvements we have taken great care to ensure that text editing is as fast as ever. The menus work smoothly and quickly even with high resolution displays. But of course, you can use Protex's efficient set of commands and keys just as before and 5.0 remains compatible with all earlier versions from 1.0 onwards.

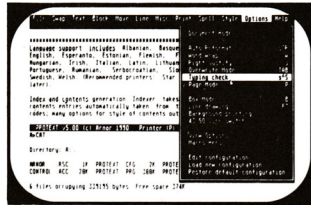
Protex 5.0 is a worthy successor to version 4, which was described as "the best word processor at any price", "the best text processor on the Amiga" and "the most powerful word processor on the Atari ST" (AUI, ST/Amiga Format, ST User).

Protex 5.0 heralds a new era of multi-lingual European software, in time for 1992 and the opening up of Eastern Europe. Protex may be used in at least 27 different languages and has 10 different national keyboard layouts built in (plus the capability to define your own symbols and keyboard layouts).



## The Features

★ **New fast & easy to use pull down menu system** with dialogue boxes and alerts; file selector; mouse dragging to set blocks. Menus complement existing commands and keyboard shortcuts, do not replace them. Menus may be used with mouse or keyboard. Amiga version follows Intuition guidelines.



★ **Enhanced printing capabilities** supports multiple proportional fonts; mixing of different font sizes on the same line; proportional formatting whilst editing; side margin, headers and footers independent of main text font. Tabs, decimal tabs and centre tabs. Extensive range of printer drivers supplied.

★ **Multiple file editing** - up to 36 files may be open; split screen editing.

★ **Graphics mode support** on PC allows use in virtually any text or graphics mode including 132 column or 75 line VGA modes; user defined characters and on-screen bold, italics and underlining now on all versions; use of 13 different accents on any character.

★ **Language support includes** Albanian, Basque, Czech, Danish, Dutch, English, Esperanto, Estonian, Flemish, Finnish, French, German, Hungarian, Irish, Italian, Latin, Lithuanian, Norwegian, Polish, Portuguese, Rumanian, Serbocroatian, Slovak, Spanish, Slovene, Swedish, Welsh. (Note: some printers do not support all languages).

★ **Index and contents** generation. Indexer takes marked words or phrases; contents entries automatically taken from titles wrapped in control codes; many options for style of contents output.

★ **Spelling checker** features completely new 110,000+ word Collins dictionary with very fast phonetic lookup. Anagrams and find word pattern. Foreign language dictionaries (German, Swedish available now, others to follow).

★ **Many other enhancements** including multi-line footnotes and endnotes; automatic timed save; add column or row of figures; indent tabs; find word at cursor; 40 column mode support; sentence operations; inter-paragraph space; much improved expression evaluator; self incrementing variables; Roman numerals; newspaper-style column printing; file sorting utility with special options for names and addresses; revised manual plus new tutorial guide.

★ **And don't forget Protex still includes** background printing; box manipulation; macro recording; exec files; headers and footers; find and replace; mail merging; undelete; file conversion utility; configuration program; auto reformatting; on screen help; time and date; typewriter mode; line drawing; disc utilities.

## Prices

Protex 5.0 may be purchased from any good computer shop or directly from Arnor. Upgrades from earlier versions are only available from Arnor and the original discs should be returned with your order.

	PC	Amiga	ST/TT	Archimedes
Protex 5.0	£149.95	£149.95	£149.95	£149.95
Upgrade from v4.2	£60	£60	£60	N/A
from earlier versions	£75	£75	£75	N/A
Protex 4.2	£99.95	£99.95	£99.95	N/A
Prodata 1.1	£79.95	£79.95	£79.95	due 1991 Q1

### Notes:

Protex 5.0 requires at least 640K of memory on all machines  
Protex 4.2 requires at least 512K of memory on all machines  
Prodata requires 1MB of memory on the Amiga

# ARNOR

Arnor Ltd (AMC), 611 Lincoln Road, Peterborough, PE1 3HA. Tel: 0733 68909 (24 hr), Fax: 0733 67299



► the computer stand, as detailed in September's issue.

Well anyway I haven't any room on top of our bench, just enough for the computer and gadgets. On either side I have drawers. The boxes that the disks come in can be taped together at an angle to allow the drawer to be shut.

If you are not too fussy you can convert an old shoe box. Cut it in half lengthwise and slide the sides in together until a disk fits, then tape or glue together. Get a piece of corrugated paper to fit inside the bottom of the box with the grooves uppermost running across the box. It's handy for blank disks or large amounts of disks.

This is my idea for a mouse mat, as I haven't any room to move a mouse on our bench – use your top drawer. Cut stiff cord or hardboard to be able to just rest on the sides

of the drawer and about three-quarters of the drawer's length (so you can lift it up to get at the contents).

Cover it with Fablon green felt and that's it! You can leave the mat in the drawer and close it – but don't forget to take the poor mouse out first!

I have your free disk with *Make money* fruit machine on. We loved to play it, but one day the screen flashed and the icon disappeared. How can I get it back?

Then there's the latest disk game, *Grey Slayer*. I've tried three times to load it from your instructions with no luck. After the words "press left button to continue" I get "unknown mouse command". Help!

When I bought our computer I bought all the Amiga computer mags I could get, especially ones with disks. They are OK but after the novelty is wearing off your

magazine seem to have more interesting articles in a more readable form.

My special favourite is the letters page, as it seems to answer a lot of my questions and I see other people have the same queries.

Also you seem to treat the writers with respect. Some other mags seem to use the reply to slang off the writers.

**Patricia Griffin,  
Chester-le-Street,  
Durham.**

*Thanks for the tips. I used to use an old lino tile as a mouse mat – it was great and a lot bigger than any you can buy.*

*What do you mean the novelty of the disks is wearing off? Don't let Jeff hear you say that or he'll send his beard to visit.*

*I think your missing Make Money is just a case of a wander-*

*ing icon. Look in all the drawers. It's probably hiding.*

## Waffle waffle complain gripe!

I'VE just wandered back from the Norwich with a copy of *Beast 2*, hoping it is a good game (haven't played it yet: Games, as always, are low on my priority list). While wandering home (if you can wander anywhere on an FZ1000) I was thinking about reviews and when they come out.

Why can a game like *Beast 2* not be reviewed, or even extensively previewed, and yet suddenly appear in the shops. I would have expected large previews in the Amiga magazines if it was so nearly completed, or even the now famous Exclusive Review!

The above point is made more curious by a game called *Supremacy* from Virgin. A computer mag reviewed this game and I must say I was very interested. Is this bit of software for sale? Not on your nellys, Mr Wulf.

Why do magazines insist on taking the software company's word for it? I would have thought that because of past experience of the computer industry, magazines would be a little more sceptical of release dates and "final copies" of software.

I am not blaming all magazines, *Amiga Computing* is certainly blameless on this count, EFT-POTRM, RES 101 and *Damocles* were all reviewed approximately a month after everyone else, but at about the same time as they appeared in the shops. Ah bliss. That's the way it should be.

The search for the exclusive should not be priority number one, especially if it doesn't arrive for months. And yes, as you've probably guessed, I do remember *Street Hawk*!

**Kevin Hall,  
CIX.**

*Games reviews are an interesting subject. It depends a great deal on the software houses. Sometimes they send someone (usually a pretty young woman) to show us a preview. Sometimes they ask us to review this preview. We refrain from doing so, and instead we write a story for the Amiga Arcade section and mention the release dates. As to the time after a game*

## The perfect word processor

I AM writing to you for advice because you have offered me much assistance in the past and there is a desperate shortage of people who are *au fait* with the Amiga in Basingstoke to whom I can turn for help.

I have been following the excellent feature on word processing and desktop publishing in *Amiga Computing*, and I would like to purchase a software package which will meet all my needs without being too far beyond my budget.

I should first of all like to know if I am the only person on the face of this planet who is not enchanted with Kindwords. I find it very claustrophobic to use, in the sense that it is very slow and does not always execute the commands I give it. For instance, while I type, entire passages of text disappear, only to return a few minutes later.

I always have to press Return, Space, and Delete twice in order for them to work. On occasions, strange messages and symbols appear in the text, and I have to spend time deleting them, which causes me much frustration. I often find using this program so tedious that I turn to QED instead of Kindwords.

It is for this reason that I am considering buying a WP/DTP package in the near future. However, with so much to choose from, I am not sure which

way to turn. Perhaps, if I give you my specifications, you may be able to help me in my decision:

- I am an RSA 3 standard typist with a maximum speed of 75 words a minute on a typewriter and 95 wpm on a computer keyboard. I am therefore going to want a package which is not going to have a long delay period between the time my fingers hit the keys and the point at which the characters appear on the screen.

- I am likely to be using the package a great deal, so I am going to want a program which is aesthetically pleasing, if I am going to be staring at the screen for long periods at a time.

- I would like to have to use the mouse as little as possible, as to take hands off the keyboard wastes time and is very annoying.

- I'd prefer the program to have graphics handling capabilities, as I often need to import illustrations into the main body of my text, though "flow around" is not essential.

- As well as bold, italic, and underline, justified right margin and wysiwyg would be essential features, and a wordcount facility would certainly make life easier.

- A spell-checker would probably remain redundant, becuz my spelling is purfekt, but a thesaurus would dispense with the need for a paper one taking up room on the desk.

I took my RSA 2 word processing exam on an Amstrad using Wordstar, which is a practical, if not cosmetically pleasing, program.

Well, faced with this information, could you advise me which package would be most suitable? I quite like the sound of Pen Pal, but would its speed deficiency hamper me too much? I hope you will be able to come to my rescue once again.

**Katharina Spencer,  
Basingstoke,  
Hampshire.**

*Hi, Katharina. It's always nice to hear from you. Unfortunately, the kind of package you describe does not exist yet, although several get close. Looking through the word processing feature in the August/September issues will be a close as you get to a thorough description of each package.*

*For speed, you would be had pressed to beat Protext. Unfortunately it has no graphics. For laying out pages, you really need a DTP package. Unfortunately, they are slow.*

*I hate to admit it, but I'm stumped. What you really need to do is find a dealer who will let you play around with as many packages as possible.*

*But you'll have to admit it: You're asking for a perfect piece of software, something which even I, Ezra, have never seen. (OK, then, apart from 3D Monster Maze.)*



## HELP FILE

### Chips with everything

(I WILL soon be getting a memory expansion for my A500 and would like some information.

1. Could you please tell me what is the new "Chipmem Option" that is being offered on some of the newer memory expansions and will there be any soldering needed to use it.

2. Could you also tell me how I can tell if my 1.3 Amiga has the new fatter Agnuschip, as I have read that newer 1.3s have it fitted. My kickstart version is 34.5. Do I have a fatter Agnus?

K. L. Pattison,  
Rusholme,  
Manchester.

These two questions are related, so I'd like to answer them backwards if you don't mind. First of all the fatter Agnus is present in ECS (Enhanced Chip Set) machines. Run Checkagnus or a similar program to determine if you have it. Alternatively lift the lid and check the version number (if it is greater than 8371 then you have ECS).

The ECS will give you, among other things, the ability to use one meg of chip memory. Chip memory is the one that can be directly addressed by the DMA channels of the custom chips and is required by sound and graphics programs.

The chipmem option on expansion boards will only work if you have ECS, but you will have to modify your motherboard. Nasty.

### Programming triangle

I am a student studying for A Level computer science. I need to learn Pascal for my project work and I would be grateful if you could send me a list of any Pascal compilers available for the Amiga 500. I am looking for a simple to use program (I use BBCs at college) which is, preferably, as cheap as possible.

M. Lott,  
Studentville.

Your luck is in Mr Lott. Not only is one available, but it is so cheap it was in the PD section of the August issue.



hits the shops and when it gets reviewed in the mag... what normally happens is the software house send us the finished, shrink-wrapped game a week or two before it gets into the shops.

We decide whether or not to review it, and if so the review is written in about a week to ten days. It then goes into the magazine.

A worst case scenario means that the delay from us getting the game to it appearing in a review in a shop is about seven weeks. The best case is about two weeks.

Software houses all have their favourite mags, depending on how they see circulation, readership and the independence of the editorial team from advertising accounts. This is why we sometimes don't receive a certain game at all, ever.

Its all very interesting, but remarkably petty at times.

### Virus vandals

THANKS for the advice on those naughty Rampage wallies giving us a virus on their disk magazine. I checked my copy as soon as I saw your warning and, yes, it was infected.

My copy of VirusX4 killed it off a treat, however when I read Steve Tibbet's doc files on the various symptoms of Lamer II it prompted me to check all disks that I'd used in the past couple of weeks.

After going through some 50 disks I found another infected one, Stampede 2 disk 2 (Rampage's previous name). I definitely hadn't used this one since I had purchased Rampage 3, so maybe this one had originally been the infected disk and it had infected the later issue.

I'm telling you so that you can pass this on to the rest of our readers, though I'm sure most would check all their Stampede.Rampage disks "just to be sure".

This brings me round to the subject of virii in general. I've found three breeds: The irritating, the awkward and the nasty.

The first kind don't do any damage, they just need a swift dose of VirusX to clear them up. The second kind normally don't do permanent damage.

They also need VirusX, but you will probably have to do a bit of repair work. The nasties are those that kill your disk's data perma-

nently. This is vandalism in my view and the culprits should be punished severely. We have enough problems with disk's copy protection causing programs to crash or hang.

This can be caused simply by your drives being dirty, misaligned or out of tolerance slightly. So when creeps start spreading destructive programs around it's no fun at all.

### Botch of Botch of the Month

YOU were too late with your Botch of the Month on "How to install a disk". I just assumed my poor knowledge of how to use Workbench was to blame: I've wiped the disk.

Anyway, it's made me write and ask about Amiga Computing doing some articles for the likes of me who hasn't got a grasp of CLIs.

I would like to have ago at learning how to program, but all the books I've looked at and all your articles seem too advanced, or at least assume a high degree of understanding.

I need a beginner's and intermediate level guide to stand any chance of grasping what it's all about.

Because of this "thickie" level all the disks you include with the mag aren't any use to me because I'm system illiterate and don't know what possible use any of the utilities are likely to have.

I've only been reading the mag for a short while, and it's cost with disks I'm not using had made me decide to cancel. But I'll hang on for a while now I've written to give to a chance to help me.

S. Heywood,  
Barlby,  
N. Yorkshire.

Hey dude, don't put yourself down! Anyone can learn to use the Amiga: It's not difficult, it just takes time.

By not using the cover disks you are denying yourself the best possible learning tool - experimenting. It doesn't matter if you don't know what is going on, but you'll never learn if you don't try.

If you are really stuck, the Abacus range of books are a good place to start. We will be addressing the problem of trying to appeal a bit more to folks new to the machine, so stay tuned to this channel!

I wouldn't hold out much hope

for the "Botch of the Month" explanation. Some brainless nerd managed to botch them too. Sigh. Remove the last INSTALL from the last line (INSTALL df0:) and it will work. Probably.

### Coding challenge!

I HAVE a problem which I want to put as a challenge to your readers. Basically I am trying to write a program which will produce a fixture list for any even number of players.

For example, for four people A,B,C and D it will give:

Round 1, A vs. B and C vs. D  
Round 2, A vs. C and B vs. D  
Round 3, A vs. D and B vs. C

Simple you say! However, with more players it gets exponentially more complex. For eight players the solution is relatively simple, but after that it gets really hairy...

I have written a program in AMOS that will calculate up to 24 players relative quickly (three hours!) but it merely tries each match until it finds one that will fit.

My challenge is: Can anyone calculate 26 or more players, or better still, find a mathematical formula that will give solutions for any number of players? It's not as easy as it looks!

Paul Williams,  
Northfield,  
Birmingham.

I had to physically restrain Aj from loading his C compiler and writing a program here and now. He had glazed look in his eyes, and he kept muttering "binomial expansion" over and over.

However, I'd rather throw the challenge over to you, the loyal readership. Can you write a program which will do the trick?

### Pedigree poser

A CRY for help to you and your readers! A disabled relative of mine is a keen and successful racing pigeon breeder. This has been a life time hobby and since his retirement a lifeline.

However because of his disability, he now finds writing a frustrating task, so with me being an avid Amiga user I have offered to log and record his large and changing stock of pedigree birds. Here we hit the problem.

Racing pigeons require a pedigree to be sent with the birds to






## AMIGA DEALS

AMIGA 500 STANDARD PACK  
 ★ A500 Computer ★ 512K Ram ★ 1Mb Disk Drive ★ Mouse  
 ★ Modulator ★ Power Supply ★ Operation-Manuals  
 ★ Workbench disks, etc.

**ONLY £339.95**



### BATMAN PLUS PACK

- ★ Amiga as in Standard Pack
- ★ Batman The Movie
- ★ F18 Interceptor
- ★ New Zealand Story
- ★ Deluxe Paint 2
- ★ Megablast Joystick
- ★ Dust Cover
- ★ High Quality Mouse Mat
- ★ Wicked Ten Game Pack
- Inc. Invaders, Pacman, Bouncer

**ALL THIS FOR JUST £369.95**

### FLIGHT OF FANTASY PLUS PACK

- ★ Amiga as in Standard Pack
- ★ F29 Retaliator
- ★ Rainbow Islands
- ★ Escape from Planet of Robot Monsters
- ★ Deluxe Paint 2
- ★ Megablast Joystick
- ★ Dust Cover
- ★ High Quality Mouse Mat
- ★ Wicked Ten Game Pack
- Inc. Invaders, Pacman, Bouncer

**ALL THIS FOR JUST £369.95**

### SCREEN GEMS PLUS PACK

- ★ Amiga as in Standard Pack
- ★ Days of Thunder
- ★ Shadow of the Beast II
- ★ Back to the Future Part II
- ★ Knightbreed
- ★ Deluxe Paint II
- ★ Megablast Joystick
- ★ Dust Cover
- ★ High Quality Mouse Mat
- ★ Wicked Ten Game Pack
- Inc. Invaders, Pacman, Bouncer

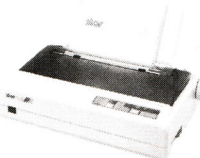
**ALL THIS FOR JUST £369.95**

## THE ALL NEW... ULTIMATE GAMES PACK

Choose any of the above three packs and add the following:-  
 EXC! USIVE: Dowling Mega Ten Game Pack comprising:- RVF Honda, Datastorm, Dungeon Quest, E-Storm! Grand Monster Slam, Kid Gloves, Powerplay, Shufflepack Cafe, Microprose Soccer, Tower of Babel.

**ALL THIS FOR THE UNBEATABLE PRICE OF £389.95**

### THE STAIR COMPUTER PRINTERS



Being Star registered dealers we only sell official UK machines which come with a full 1 year guarantee. Beware of inferior imported products

OFFICIAL U.K. VERSIONS	RRP	OUR PRICE
STAR LC10 mono 144/36 C.P.C.	£229.95	£149.95
STAR LC10 II 25% faster version	£263.35	£169.95
STAR LC10 Colour, 7 colours	£297.85	£189.95
STAR LC24-10 – 24 pin multifont	£343.85	£229.95
STAR LC10 Sheet Feeder (auto)	£74.75	£59.95
STAR LC10 Mono Ribbons	£5.95	£3.95
STAR LC10 Colour Ribbons	£7.95	£5.95
STAR LC24-10 Ribbons	£7.95	£5.95
STAR LC10 Quality Dust Cover	£7.95	£5.95

### PHILIPS TV TUNER

- ★ Converts your 1084S/8833 into a colour TV.
- ★ Complete with aerial & plug
- ★ Free 1 year on site maintenance

**£69.95**

### 3 1/2" HIGH QUALITY DISKS

- ★ 100% certified
- ★ Individually wrapped
- ★ "Made in Japan" media
- ★ Fully guaranteed

**Box of 50 £19.95**  
**Box of 100 £37.95**  
**Roll of 1,000 labels £5.99**

### PERIPHERALS, ACCESSORIES AND SERIOUS SOFTWARE

FOR THE MORE DISCERNING COMPUTER USER	RRP	OUR PRICE
Commodore 1084S Stereo Monitor	£299.95	£249.95
High Quality Amiga Dust Cover	£9.95	£5.95
High Quality 1084S Dust Cover	£12.95	£6.95
Replacement Amiga Power Supply	£59.95	£39.95
Kindwords 2 wordprocessor	£49.95	£29.95
Superbase Personal 2	£99.95	£29.95
Maxiplan Spreadsheet	£99.95	£29.95
Photon Paint 2 – Latest Version	£79.95	£19.95
Deluxe Paint 2 – Excellent Value	£49.95	£9.95
Contriver Replacement Mouse	£34.99	£19.99

### 1/2 MEG UPGRADE BOARD

- ★ Uses latest 4 chip design
- ★ Memory on/off switch
- ★ Option of battery backed clock
- ★ Full 12 month guarantee
- ★ New super low price

**£29.95**  
**Clock version £39.95**

### VIDI SCOOP

- Vidi Amiga
- Plus Vidi Chrome
- Plus E180 VHS tape

**ONLY £99.95**

### CUMANA CAX 354 DISK DRIVE

- ★ Latest Slimline Design
- ★ Quiet, High Precision Head Positioning
- ★ High Speed Access
- ★ Acknowledged as "The Best"

**RRP £89.95**  
**£64.95**

## SAVE £153 and become a record producer into the bargain

#### Desk Top Music Starter Package for Amiga

Techno-fear takes some strange forms, non stranger than the fear of asking a shop assistant what connecting cables are needed and how to hook them up. This starter package puts paid to that one. Inside the box is everything you need to make music on your computer.

- ★ A Roland CM-32L Sound Module – your orchestra
- ★ Dr T's Tiger Cub sequencer software – your composer
- ★ Dr T's Copyist Apprentice software – your scorewriter

and most importantly it includes all the cables required to get the system working and easy instructions on getting started.

Package value: £547rrp. **Package price: £469rrp.**

#### PC-200 MIDI Controller

A compact 49-note keyboard to suit your computer music setup. Touch-sensitive keys, pitch-bend/modulation (vibrato) lever and MIDI control features like 16 transmit channels, 128 program changes and a Date entry slider for adjusting volume and stereo imaging. And if you need a few more keys to complete your latest hit a shift function effectively turns the PC-200 into a six octave keyboard.

Price: £175rrp

#### CM-32L – An orchestra at your fingertips

128 fantastic sounds to choose from, including guitars, pianos, strings brass, synthesizers and effects plus drums. Using the CM-32L with a sequencer (ie tapeless recorder) like Tiger Cub you can have up to eight different sounds plus drums playing at the same time... it's like having your own personal recording studio.

Price: £369rrp

#### Tiger Cub/Copyist Apprentice software

Tiger Cub turns your computer into a recording studio, complete with 12-channel mixing desk, effects routing and editing suite. Simple and logical screens and menus make it easy to use for the complete beginner; powerful control features make it ideal for the professional. Copyist Apprentice lets you print out and edit your music – even down to altering individual drumbeats – and alternative icon screens mean you don't even have to read music.

Price: £178rrp

#### MIDI Interface & Cable RRP £29.95

If you've got the ideas to make you the next Jazzy-B or the next Jon Bon Jovi, the Roland Desk Top Music System can turn your dreams into hits.

Package value: £752rrp.

**Dowling Package price: £599rrp (or £449 without PC200 keyboard)**

### ★ NEW ★ MUSIC-X Junior

"Provides everything that the average amateur musician could possibly require" – Amiga Format

N.B. Fully compatible with Music-X

RRP £79.95 **OUR PRICE £49.95**

### ★ NEW ★ MUSIC-X Enhanced 1.1 Version

Widely acknowledged as the best music package available. Now with even more enhancements – it cannot be beaten.

N.B. Be wary of older versions being sold cheaper

RRP £149.95 **OUR PRICE £89.95**

### ★ NEW ★ MIDI INTERFACE

Our own beautifully designed product, colour co-ordinated and designed to sit on your Amiga.

Features: 1 x IN, 1 x THRU, 2 x OUT Comes complete with midi lead (extras £2.95)

RRP £29.95 **OUR PRICE £19.95**

### PHILIPS TV TUNER

- ★ Converts your 1084S/8833 into a colour TV.
- ★ Complete with aerial & plug
- ★ Free 1 year on site maintenance

**£69.95**

### 3 1/2" HIGH QUALITY DISKS

- ★ 100% certified
- ★ Individually wrapped
- ★ "Made in Japan" media
- ★ Fully guaranteed

**Box of 50 £19.95**  
**Box of 100 £37.95**  
**Roll of 1,000 labels £5.99**

### PERIPHERALS, ACCESSORIES AND SERIOUS SOFTWARE

FOR THE MORE DISCERNING COMPUTER USER	RRP	OUR PRICE
Commodore 1084S Stereo Monitor	£299.95	£249.95
High Quality Amiga Dust Cover	£9.95	£5.95
High Quality 1084S Dust Cover	£12.95	£6.95
Replacement Amiga Power Supply	£59.95	£39.95
Kindwords 2 wordprocessor	£49.95	£29.95
Superbase Personal 2	£99.95	£29.95
Maxiplan Spreadsheet	£99.95	£29.95
Photon Paint 2 – Latest Version	£79.95	£19.95
Deluxe Paint 2 – Excellent Value	£49.95	£9.95
Contriver Replacement Mouse	£34.99	£19.99



## HOW TO ORDER



### By Phone

Simply call our Head Office  
 Quoting your Access/Visa number on

**0767 681760 (8 lines)**

### By Post

Make cheques, Building Society Drafts or Postal Orders payable to Dowling Computers

### Delivery

(U.K. Mainland - most areas)

Please add £6 courier delivery for orders over £100, add £2 P&P for orders under

★ ★ ★ ★ ★ ★ ★

## GOLD CLUB SERVICE

★ 7 day money back guarantee if not completely satisfied

★ 30 day exchange for new policy should a fault occur

★ 1 year guarantee giving FREE collection and delivery service should a fault occur

★ Exclusive Gold Card with personal membership number entitling you to special offers

★ All this for a nominal £10 per item over £100.

★ ★ ★ ★ ★ ★ ★

# DOWNLODING COMPUTERS

UNITS 48/50 TYNE ROAD, SANDY, BEDS SG19 1SA



► their new owners. This is similar to a family tree tracing three to four generations and a little detail of each bird's successes.

I am, however, unable to find a program that will allow me to database the pigeons with their details and recall and print them in such a fashion.

Do you or your readers know of the existence of such a program either commercially or in the public domain. Or would a programmer be prepared to take the challenge and code such a utility?

I feel sure that with the amount of breeders of pedigree animals in this country that such a program must be a viable proposition and can only help enhance the Amiga's reputation as a serious home computer and not just a games machine with "excellent graphics and sound capabilities."

All too often I hear these words and it makes me see red, yes, alongside Macs and Sun workstations the Amiga may pale a little, but with the arrival of programs such as Pagesetter II, Pro Page, and the many and varied accounts, spreadsheets and databases now

available in the more "serious software" market surely the Amiga deserves more credit.

With the expansion hardware now available I feel sure the Amiga is more than a games console with a keyboard!

Please print my address (if this letter reaches the print room) as I would be grateful for any help in locating the above program.

**Stuart Doe,  
58 Winchester Rd,  
Colchester,  
Essex.**

*Hmmm. It really depends on how complicated things are going to get. If you want to catalogue birds on a large scale you will need a fairly expensive and extensive fully relational database (to avoid having to fill in the same details again and again in different records).*

*However, I'm sure it would be quite possible to adapt one of the human genealogy programs to your needs. I believe there are some in the public domain and I'm fairly sure that some kind Amiga owner will get in touch and let us all know.*

## IFF only...

I HAVE recently changed from Spectrum to Amiga and am trying to understand AmigaBasic. I would like to know whether I can use pictures from DPaintII or Spritz in the basic programs I am writing. If so, I would appreciate a simple to understand answer please, if that is possible.

**Arthur Dark,  
London.**

*Almost all art packages on the Amiga, including the two you mention, use a system of saving graphics files as a standard IFF form. IFF is a standard way of transferring information between similar applications on the Amiga,*

*and is a subject more fully discussed in the Almanac.*

*It really depends what you intend to use the graphics for, but for a start you'll want to read them in and display them. This is very easy indeed. In fact it is so easy that CBM have already written the program for you, you'll find it in the Amiga Basic drawer on your Extras disk. It's called LoadILBM. Simply adapting this program may fulfil your requirements.*

*If you want to do anything more serious I recommend you get a proper version of Basic or even AMOS, which is quite excellent for graphics.*

## Softwares

I AM writing in reply to everybody saying that Amiga software is too expensive, and I agree. The introduction of budget software helped a bit, but due to their bad graphics and gameplay they weren't much help.

I know everyone grumbles about the prices. Who wants to pay £19

to £25 for a computer game that will probably be completed after a couple of weeks, with all the tips and cheats in magazines, or given up.

You might see a scene shot or review in a magazine and think what a brilliant game then when you spend 25 quid and get it home it's not entirely like what you imagined it to be - less gameplay or the screenshot was for another machine.

But then you have to look on the programmer's side, I mean when I leave school I dream of becoming a programmer and having "loads a money!"

Maybe the prices could be lowered a couple of quid, but remember every time you buy a game you are helping some poor destitute programmer out there.

**Nick Wright,  
Thornton Heath,  
Surrey.**

*I forget how many times I have replied to a letter like this. The price of software is one of those debates that will go on for as long as there are software houses. Again I say, the reason that software is priced so high is because that's as much as software houses can charge and still get people to buy the game - if you don't like the price don't pay it.*

*I would challenge your assumption, as I'm sure many professional programmers would, that the development team make vast sums of money out of the sales of their games. Although individual contracts are of course negotiable, I think you'll find that as a fraction of the price of a game, they would be lucky to be able to buy a tired old hack a half of shandy.*

## Why, oh why, oh why?

I HAVE just started reading your September issue and I must say it is the best magazine on the market. The Public Domain, The Code Clinic and The Amiga Scene column are among my favourites. The free disk is a delight (how about more assembler code?).

I have tried reading programming magazines such as Transactor and I.C.P.U.G., but as you may know Transactor went bankrupt and I.C.P.U.G. is just damned inconsistent (always changing its format). Anyway, I have a few questions to ask to you which have been bugging me:

1. Can the internal clock, which is supplied with ram expansions, be accessed with a specific address? And if so, is it possible to read and write to this location using assembly?

2. Is it true that viruses can be stored on the internal clock's memory and therefore still be alive when switched off?

3. Can a higher processor be installed into a normal 500? Can all the custom chips be accessed in

the normal methods using the new processor? Will everyday software still load? And how many addressing methods does a 68030 have?

4. Why do people get so scared about viruses? My friend is paranoid about them. Every time I give him a disk he has to analyse it with 100 different virus checkers!

I have never had any trouble with viruses in my entire life. In fact I have a couple roaming about my disks. Unless they really annoy me I wipe them out.

Why have people slaved over making flashy virus killers when the Install command on the C directory does a better job? It totally rewrites the boot-block whether it detects a virus or not. Surely this is more efficient?

5. Does the new CDTV from Commodore have the option to program it and do you think it will overrun the Amiga market like the Amiga did to the 64?

6. Do you think I will win your prizes?

**Jan Paldernans,  
Rotterdam.**

*Thanks for your comments. Now to the answers:*

*1. Yes, if they couldn't be accessed, how would Preferences be able to set them? Or your Amiga be able to tell the time? I don't know the addresses, but I'll ask Jolyon to mention them in next month's Machine Code column.*

*2. No, there isn't enough room. Probably. Some viruses can effect the clock's contents, but none will live there.*

*3. Yes, yes, sometimes, dunno.*

*4. You have obviously never had a commercial game destroyed by a boot-block writing virus. Or a month's copy vanish by a file destroying virus. Remind me never to put any disk you send me into my drive.*

*5. Hmmm. Depends what you mean by "program". I don't believe it will overrun the Amiga market. It is aimed at a different group to normal Amiga owners. If it ever catches on.*

*6. Unlikely.*



# SOFTMACHINE

## HARDWARE

### A500 SCREEN GEMS

Back to the Future II  
Days of Thunder  
Shadow of the Beast II  
Nightbreed  
Deluxe Paint II  
£374.99

### A 500 FLIGHT OF FANTASY

F29 Retaliator  
Rainbow Islands  
Escape from the Planet  
of the Robot Monsters  
Deluxe Paint II  
£374.99

### AMIGA 500 FIRST STEPS

A501 Ram Expansion  
Deluxe Paint II + Print II  
Pro Write + Info File  
Let's Spell at Home  
Amiga Logo + Talking Turtle  
Mouse Mat + 10 Blank Disks  
£524.99

### AMIGA 3000

A3000 16MHZ + 40Mb Drive  
£2085.00  
A3000 25MHz + 40Mb Drive  
£2499.00  
A3000 25MHz + 100Mb Drive  
£2749.00  
1950 Multisync Monitor  
£425.00

### AMIGA B2000 SYSTEMS

Latest revision UK B2000's  
available singly or bundled with  
2040 Mb Hard drives and/or  
PC-X/TAT Bridgeboards  
Please call for latest prices

### SOFTMACHINE STARTER PACK

Deluxe Mouse Mat  
Tailored Dust Cover  
Drive Head Cleaner  
10 TDK MF2DD Disks  
80 Cap Lockable Disc Storage Box  
ONLY £20\*  
\*When purchased with any Amiga  
computer...Offer limited to 1  
starter pack per Amiga purchased

## PERIPHERALS

A500 Batman Pack .....£374.99  
Amiga Class of 90's .....£524.99  
1085 Colour Monitor .....£259.99  
A1011 Disk Drive .....£89.99  
A590 20Mb Hard Drive .....£364.99  
A501 Ram Exp/Clock .....£89.99  
A520 Modulator .....£24.99  
A1352 Mouse .....£34.99

Philips 8833 Monitor .....£244.99  
Cumana 1Mb 3.5" Drive .....£69.99  
Cumana 5.25" Drive .....£119.99  
0.5 Mb Ram Exp/Clock .....£54.99  
Hitachi Camera + lens .....£219.99  
Digiview 4 .....£112.50  
Vidi Amiga .....£97.50  
Colourpic .....£434.99  
Type 10 Handy Scanner .....£254.99  
Minigrip .....£97.50  
Rendale 8802 Genlock .....£187.50  
Cherry A3 Tablet .....£479.99  
Podscat 12" x 12" tablet .....£196.99  
Designer Modem .....£104.99  
Pro 4 Modem .....£399.99  
Linnnet 2400 Modem .....£144.99  
Linnnet 1200 Modem .....£244.99  
Linnnet 4200 Modem .....£359.99  
WS 4000 Modem .....£164.99  
Midi Master Interface .....£29.99  
Omega Midi Interface .....£29.99  
A.M.A.S. ....£79.99  
Futuresound .....£74.99  
Mastersound .....£144.99  
Contriver Mouse .....£22.50  
Optical Mouse .....£34.99  
10 x Sony Bulk 3.5" .....£6.99  
10 x Sony MFD2 DD .....£10.99  
10 x TDK MF2DD 3.5" .....£12.99  
3.5" 40 Cap Lockable Box .....£5.99  
3.5" 80 Cap Lockable Box .....£19.99  
3.5" 150 Cap Posso Box .....£19.99  
Printer Cable .....£4.99  
3.5" Head Cleaner .....£3.99  
Mouse Mat with Amiga Logo .....£5.99

## BOOKS

Advanced Amiga Basic .....£18.95  
\*Adv Sys Prog Guide .....£32.45  
\*3D Graph Prog Basic .....£18.45  
Amiga Applications .....£16.95  
\*Assembly Lang Prog .....£14.45  
Amiga Basic Inside & Out .....£18.95  
Amiga C for Adv. Prog. ....£32.45  
Amiga C for Beginners .....£18.45  
Amiga DOS .....£14.95  
Amiga DOS Inside & Out .....£18.45  
Amiga DOS Quick Ref. ....£8.95  
Amiga DOS Ref. Gde .....£14.95  
Amiga Desktop Video .....£18.45  
Amiga Desktop Video Gde .....£18.45  
\*Disk Drives Inside & Out .....£27.95  
Amiga for Beginners .....£12.95  
\*Gde Gra./Sound/Comm. ....£17.45  
Graphics Inside & Out .....£32.45  
Hardware Ref. Manual .....£21.95  
Amiga Mach. Lang. Guide .....£21.95  
Amiga Machine Lang .....£14.95  
\*Microsoft Bas. Prog. Gde .....£18.45  
\*Prog. Handbook Vol. 1 .....£24.95  
\*Prog Handbook Vol 2 .....£23.95  
Amiga Prog Gde Compute .....£17.45  
Amiga Prog Gde Weber .....£20.45  
\*ROM Kernel Ref Man Inc. ....£28.95  
\*ROM Kernel Ref Man Lib. ....£29.95  
Amiga Sys Prog Guide .....£32.95  
Amiga Tricks and Tips .....£14.95  
Becoming an Amiga artist .....£18.45  
Beginners guide to Amiga .....£16.95  
Computes 1st Book of \* .....£16.95  
Computes 2nd Book of \* .....£16.95  
Elementary Amiga Basic .....£14.95  
Inside Amiga Graphics .....£16.95  
Inside the Amiga with C .....£24.50  
Kids and the Amiga .....£15.95  
Mapping the Amiga .....£20.95  
Prog Guide to Amiga .....£23.95  
\* Indicates Amiga in Title

## LANGUAGE/COMPILERS/ETC

AMOS .....£35.95  
A-Rexx .....£32.50  
Argasm .....£42.50  
Aztec C Developer .....£199.95  
Aztec C Professional .....£112.95  
Benchmark Modula 2 .....£137.50  
Benchmark Libraries .....£72.50  
Devpac 2 .....£43.50  
GFA Basic V3 Compiler .....£22.95  
GFA Basic V3 Interpreter .....£39.95  
Hisoft Basic .....£56.95  
Hisoft Extend .....£15.95  
K-Seka Assembler .....£34.95  
Lattice C V5 .....£174.95  
Lattice C++ .....£259.95

## UTILITIES

B.A.D. ....£32.50  
B.B.C. Emulator .....£39.95  
Calligrapher .....£67.95  
Disk Master .....£39.95  
Dos2 Dos .....£29.95  
Cross Dos V4 .....£28.95  
Gomf V3 .....£27.95  
Interchange .....£39.95  
Kara Fonts .....£46.95  
Mailshot Plus .....£34.95  
Masterpiece Fonts .....£137.50  
Power windows V2.5 .....£54.95  
Project D .....£29.95  
Quarterback .....£39.95  
Superback .....£41.95  
X-Copy .....£16.95  
X-Copy + Hardware .....£28.95

## CAD/GRAPHICS/ANIMATION

3D Professional .....£394.95  
Animagic .....£54.95  
Can do .....£101.95  
Comic Setter .....£39.95  
Comic Setter Clip Art .....£17.50  
Deluxe Paint III .....£59.95  
Deluxe Photolab .....£54.95  
Deluxe Print II .....£36.95  
Deluxe Video III .....£74.95  
Design 3D .....£62.95  
Digi Paint 3 .....£54.95  
Digitimate 3 (needs A-Rexx) .....£33.95  
Fantavision .....£32.50  
IntroCAD Plus .....£81.50  
Movie Setter .....£39.95  
Page Flipper + F/X .....£69.95  
Page Render 3D .....£81.50  
Photon Paint 2 .....£29.95

## WORD PROCESSING

Excellence 2 .....£132.50  
Kind Words 2 .....£35.95  
Pen Pal .....£104.95  
Protext .....£102.50  
Pro Write V3 .....£102.50  
Scribble Platinum .....£41.50  
Transcript .....£32.50  
Word Perfect .....£176.95

## DATABASES

Acquisition 1.3 .....£169.95  
K-Data .....£34.95  
Prodata .....£56.95  
Superbase Personal .....£42.50  
Superbase Personal 2 .....£69.95  
Superbase Professional .....£169.95

## SPREADSHEETS

Advantage .....£79.95  
DGCalc .....£27.95  
K-Spread 2 .....£42.50  
Superplan .....£69.95

## EDUCATIONAL

Designasaurus .....£32.50  
Distant Suns .....£52.95  
Fun School Under 6 .....£14.95  
Fun School 2 6-8 years .....£14.95  
Fun School 2 Over 8 .....£14.95  
Fun School 3 Under 8 yrs .....£17.95  
Fun School 3 5-7 years .....£17.95  
Fun School 3 Over 7 .....£17.95  
Mega Maths GCSE .....£20.95  
Micro English GCSE .....£20.95  
Micro French GCSE .....£20.95  
Micro Maths GCSE .....£20.95  
Play and Read .....£20.95  
Primary Maths .....£20.95  
Spell at Home .....£15.95  
Spell at The Shops .....£15.95  
Spell Book 4-6 years .....£15.95  
Spell Book 7+ .....£15.95  
Things to do with Numbers .....£15.95  
Things to do with Words .....£15.95  
World Atlas .....£44.95

PIXmate .....£39.95  
Professional Draw V2 .....£104.95  
Pro Video Plus .....£193.50  
The Director .....£47.50  
The Director's Toolkit .....£27.50  
TV Show V2 .....£57.50  
TV Text Prof. ....£104.95  
Video Generic Master .....£54.95  
Video Titler .....£85.95  
Video Wipe Master .....£54.95  
X-CAD Designer .....£86.95  
Zoetrope .....£74.95

## DESKTOP PUBLISHING

G.D. Type Decorative .....£32.50  
G.D. Type Designer .....£32.50  
G.D. Type Publisher .....£32.50  
G.D. Type Video .....£32.50  
Home Office Kit .....£116.95  
Pagesetter V2 .....£49.95  
Pagestream .....£127.95  
Professional Page V1.3 .....£159.95  
PP Outline fonts .....£104.95  
PP Structured Clip Art .....£35.95  
PP Templates .....£35.95  
Proclips .....£20.95

## MUSIC

A Drum .....£29.95  
Bars and Pipes .....£184.95  
Deluxe Music .....£54.95  
DR. T's Copyist App .....£72.50  
DR. T's Copyist DTP .....£184.95  
Instant Music .....£19.95  
Music X .....£74.95  
Quartet .....£35.95  
Sonix .....£49.95

## COMMUNICATIONS

BBS PC .....£97.50  
GP Term .....£57.50  
K-Comm 2 .....£34.95  
Ruby Comm .....£54.95

## ACCOUNTS

Cashbook Combo .....£49.50  
Cashbook Controller .....£34.95  
Final Accounts .....£21.95  
Home Accounts .....£21.95  
Small Business Acc. Cash .....£56.50  
Small Business Acc. Xtra .....£79.95  
System 3 .....£34.95

Please make cheques/postal orders payable to SOFTMACHINE. All items subject to availability.  
All prices include V.A.T. & U.K. Delivery. All prices subject to change without notice. E.&O.E.

# SOFTMACHINE

Dept. AC11, 36 Guernsey Road, Sunderland SR4 9RR. Telephone: 091-385 7426

## GAMES CENTRE

688 Attack Sub .....£16.99  
Adidas Champ Football .....£16.99  
Adidas Tie Break .....£24.99  
After the War .....£13.99  
All time Favourites .....£19.99  
Amtago .....£13.99  
Anarchy .....£13.99  
Anthead Desert Disk .....£10.99  
Apprentice .....£13.99  
Astate .....£13.99  
Atomix .....£13.99  
Awesome .....£24.99  
Back to the Future II .....£16.99  
Balance of Power 1990 .....£16.99  
Batman - The Movie .....£16.99  
Battlechess .....£16.99  
Battlemaster .....£16.99  
Beast II .....£24.99  
Betrayal .....£16.99  
Black Tiger .....£16.99  
Blue Angels .....£16.99  
Bomber .....£19.99  
Bomber Mission Disk .....£10.99  
Breach 2 .....£16.99  
BSS Jane Seymour .....£16.99  
Budokan .....£16.99  
Cahal .....£16.99  
Castle Master .....£16.99  
Champions of Krynn .....£19.99  
Chase HQ .....£16.99  
Chess Champion 2175 .....£19.99  
Chessmaster 2000 .....£16.99  
Cloud Kingdom/Kid Gloves .....£13.99  
Codename Iceman .....£26.99

Colonels Bequest .....£16.99  
Colorado .....£16.99  
Colossus Chess X .....£16.99  
Combo Racer .....£16.99  
Conqueror .....£16.99  
Conquest of Camelot .....£26.99  
Corporation .....£16.99  
Cyberball .....£13.99  
Damocles .....£16.99  
Dan Dare 3 .....£13.99  
Day of the Vyper .....£16.99  
Days of Thunder .....£16.99  
Debut .....£16.99  
Distant Armies .....£16.99  
Dragons Breath .....£19.99  
Drakhen .....£19.99  
Double Dragon II .....£13.99  
Dynasty Wars .....£16.99  
Edition One .....£16.99  
E-Motion .....£16.99  
East v West .....£16.99  
Elite .....£16.99  
Emlyn Hughes Int Soccer .....£16.99  
Escape/Singles Castle .....£29.99  
Escape/Robot Monsters .....£13.99  
F16 Combat Pilot .....£16.99  
F29 Retaliator .....£16.99  
Falcon + Mission Disk 1 .....£24.99  
Falcon Mission Disk 2 .....£13.99  
Ferrari Formula 1 .....£16.99  
Final Countdown .....£16.99  
Flight Simulator 2 .....£24.99

Flimbos Quest .....£16.99  
Flood .....£16.99  
Ghostbusters 2 .....£16.99  
Ghosts 'N' Goblins .....£13.99  
Ghouls & Ghosts .....£16.99  
Gold of the Aztecs .....£16.99  
Gunship .....£16.99  
Hammerfist .....£16.99  
Hard Drivin' .....£13.99  
Harley Davidson .....£19.99  
Herewith The Clues .....£16.99  
Heroes .....£19.99  
Hero's Quest .....£24.99  
Imperium .....£16.99  
Infestation .....£16.99  
International 3D Tennis .....£16.99  
Ironlord .....£16.99  
Italy 1990 .....£16.99  
It Came From The Desert .....£19.99  
Ivanhoe .....£16.99  
Jack Nicklaus Golf .....£16.99  
Jumping Jackson .....£13.99  
Kick Off 2 .....£16.99  
Killing Game Show .....£16.99  
Kings Quest 4 .....£26.99  
Klax .....£13.99  
Last Ninja II .....£16.99  
Leisure Suit Larry III .....£26.99  
Loom .....£19.99  
Lost Patrol .....£16.99  
Mad Prof. Moriarti .....£13.99  
Magnum 4 .....£19.99

Manchester United .....£16.99  
Manhunter San Francisco .....£19.99  
Matrix Marauders .....£16.99  
Midnight Resistance .....£16.99  
Midwinter .....£16.99  
Might and Magic II .....£19.99  
Mr Do Run Run .....£10.99  
Neuromancer .....£16.99  
New York Warriors .....£13.99  
Night Breed .....£16.99  
Operation Stealth .....£16.99  
Operation Thunderbolt .....£13.99  
Oriental Games .....£16.99  
Pipe Mania .....£16.99  
Pirates .....£16.99  
Player Manager .....£13.99  
Police Quest 2 .....£16.99  
Pool of Radiance .....£19.99  
Populous .....£16.99  
Populous Promised Lands .....£6.99  
Projectyle .....£16.99  
Pyramax .....£13.99  
Rainbow Islands .....£16.99  
Red Storm Rising .....£16.99  
Resolution 101 .....£16.99  
Robocop .....£13.99  
Rotox .....£16.99  
Rorkes Drift .....£16.99  
Second Front .....£19.99  
Shadow Warriors .....£16.99  
Sherman M4 .....£16.99  
Shockwaves .....£16.99

Sim City .....£19.99  
Skidz .....£13.99  
Space Quest 2 .....£16.99  
Spy Who Loved Me .....£13.99  
Starblade .....£16.99  
Super Cars .....£13.99  
Teenage Mutant Turtles .....£24.99  
Tennis Cup .....£16.99  
Test Drive 2 Cal Chall .....£7.99  
Test Drive 2 Supercars .....£7.99  
Test Drive 2 The Duel .....£16.99  
Their Finest Hour .....£19.99  
The Plague .....£16.99  
Thunderstrike .....£16.99  
Time Machine .....£16.99  
Triad 3 .....£19.99  
Turrican .....£13.99  
Tusker .....£16.99  
TV Sports Basketball .....£19.99  
Ultimate Golf .....£16.99  
Universe 3 .....£16.99  
Untouchables .....£16.99  
Unreal .....£19.99  
Venus .....£13.99  
Viking Child .....£16.99  
War Head .....£16.99  
Web of Terror .....£13.99  
Welltriss .....£16.99  
Wings .....£19.99  
Wings of Fury .....£16.99  
Wild Life .....£13.99  
World Cup Italia '90 .....£13.99  
Xenomorph .....£16.99

Please phone for latest releases new titles arriving daily

# SOFTMACHINE

Dept. AC11, 36 Guernsey Road, Sunderland SR4 9RR. Telephone: 091-385 7426





**Everyone (yes, EVERYONE)  
saves money buying presents at  
the Computer Shopper Show!**

*An exit poll conducted at last year's Computer Shopper Show revealed that 95 per cent of customers reported "substantial savings" from purchases – with individual figures ranging from £50 to more than £1,000!*

- ★ **One-stop shopping for ALL your computer Christmas presents!**
- ★ **Hundreds of stands packed with special show bargains!**
- ★ **Expert advice to help you make the right choice!**







**Beat the  
queues —  
by sending  
for your  
tickets  
NOW!**

Please send me

\_\_\_\_\_ Adult tickets at £4 (save £1)  
\_\_\_\_\_ Under 16's tickets at £2.50 (save £1)

\_\_\_\_\_ Family tickets — admits up to 2 adults and 2 children — £12.00 (save £5)

I expect to attend the Show on:

☐ Thursday ☐ Saturday  
☐ Friday ☐ Sunday

I am interested in:

☐ Acorn ☐ Amstrad ☐ Atari ☐ Commodore  
☐ IBM ☐ Other \_\_\_\_\_

I would like to pay by:

☐ Cheque payable to Blenheim Database Exhibitions

☐ Visa ☐ Access

\_\_\_\_\_

Expiry date \_\_\_\_\_ Signed \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

Please return your completed order form to:  
Computer Shopper Show Ticket Office,  
PO Box 2, Ellesmere Port, South Wirral L65 3EA

AMC II

**RING THE SHOW'S  
24-HOUR HOTLINE**

**051-357 1736**



**S**TEINBERG is a name that will be familiar to anyone who has even the vaguest idea of what's hot in the current MIDI music software scene. Even in the most hi-tech of recording studios, you'll find Steinberg products working alongside Fairlights and Synclaviers, churning out anything from music for the latest feature films to the next chart hit.

Unfortunately for Amiga musicians, Steinberg have preferred to restrict their activities to somewhat less well endowed machines such as the Atari ST and the Apple Mac.

However, as a sign of the Amiga's growing importance within the music scene, Steinberg have finally seen fit to release their very first product for our beloved machine: Enter Amiga Pro-24.

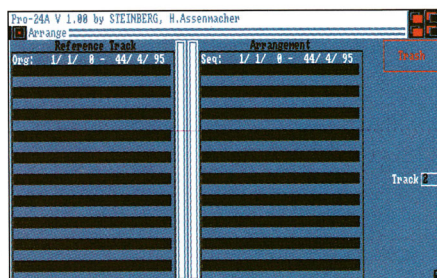
Pro-24 (which is actually called Pro-24A – not Pro-2400 as we were originally led to believe) arrives in a very attractive box folder of the quality more associated with high-end wordprocessors and databases. Contained within the voluminous folder is a single program disk and a fairly comprehensive ring bound

having to work with a mere 24 tracks somewhat restricting, but there are several factors you must consider.

For starters, how many of MusicX's 250 tracks do you actually use? (I never use any more than 20). Secondly, what's the point of having all those tracks available when MusicX will only allow you to play a maximum of 20 at any one time? OK, it's nice to know they are there, but you don't really need them.

After what seems an eternity of disk whirring and crunching, Pro-24 springs to life (that is, if you've remembered to plug in the dongle).

Upon loading you'll be greeted by a rather crowded tape transport page containing a bewildering number of



The track arranger

*If you're looking for a tried and tested music sequencer, Steinberg's Pro-24 could be the insect's leg joints. Jason "Donovan" Holborn puts it to the test*

icons and other associated gadgets. Closer inspection soon reveals that most of the icons are pretty standard.

Along the top of the screen are a row of gadgets that control the 24 tracks they can be switched on and off, assigned to different MIDI channels and so forth.

Below this is a rather empty rectangular box that doesn't seem to do a great deal – until, that is, you strike a key on your MIDI keyboard. This handy box acts as a sort of monitor that displays MIDI activity across all 16 channels.

When you strike a key, Pro-24

# Steinberg, Aitken

manual. One of the biggest disappointments is the presence of one of those incredibly annoying dongles.

The Amiga dongle plugs into the second joystick/mouse port and *must* always be present while Pro-24 is running – if you unplug it while Pro-24 is still active, the program complains bitterly by locking up completely, leaving you with one dead sequencer. It's Steinberg's way of telling you that you're only allowed to run it on a single machine at any one time.

Just like a professional multitrack tape machine, Pro-24 offers 24 tracks of realtime MIDI recording. In many respects, there's not a great deal of difference between working with Pro-24 and working with a multitrack – except of course that Pro-24 records MIDI data, not sound.

Those of you spoilt by programs such as MusicX – which offers 250 tracks – may find the thought of





shows which channel it is receiving the information from, where it is to be sent to, and how hard the key was hit (you'll need a velocity-sensitive keyboard to take advantage of this).

Further on down are the now familiar tape transport controls. These include the standard collection of icons to record and play sequences, start, stop and pause operation and of course, the old fast forward and rewind gadgets.

Littering the rest of the screen are a number of extra icons that allow you to define different aspects of the sequencer's operation. This is one area where the Amiga version of Pro-24 differs from its ST parent. The ST version relied heavily on pull down menus, but a large number of previously menu-based functions have been moved out and placed on the main screen, making Amiga Pro-24 considerably more icon based.

**B**EFORE you can start to do anything, you'll want to record something into Pro-24. Like most modern sequencers, it offers a vast

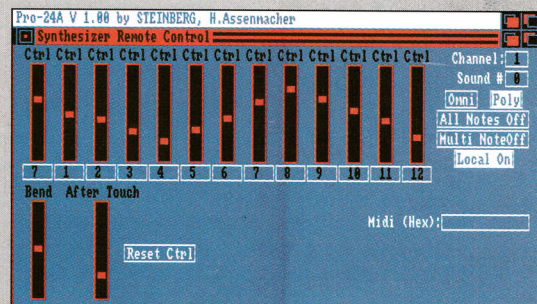
range of extra utilities designed to make the task of managing and manipulating MIDI data somewhat easier.

**Synthesiser Remote** This utility lets you send commands to your synthesisers using a combination of MIDI controllers and SysEx messages. By defining a series of proportional gadgets you can configure the Synth Remote utility specifically for your MIDI setup.

**SysEx Filer** Save money on synth RAM cards by using Pro-24 to store all your synth sound patches. The SysEx filer can receive and send SysEx data from just about any synth that is capable of generating such messages. These dumps can then be

range of recording options. There are three recording modes – normal, mix and auto.

Normal mode is pretty obvious – whenever you record onto a track, any previous performance information will automatically be erased.



Synth remote control

stored on standard Amiga disks.

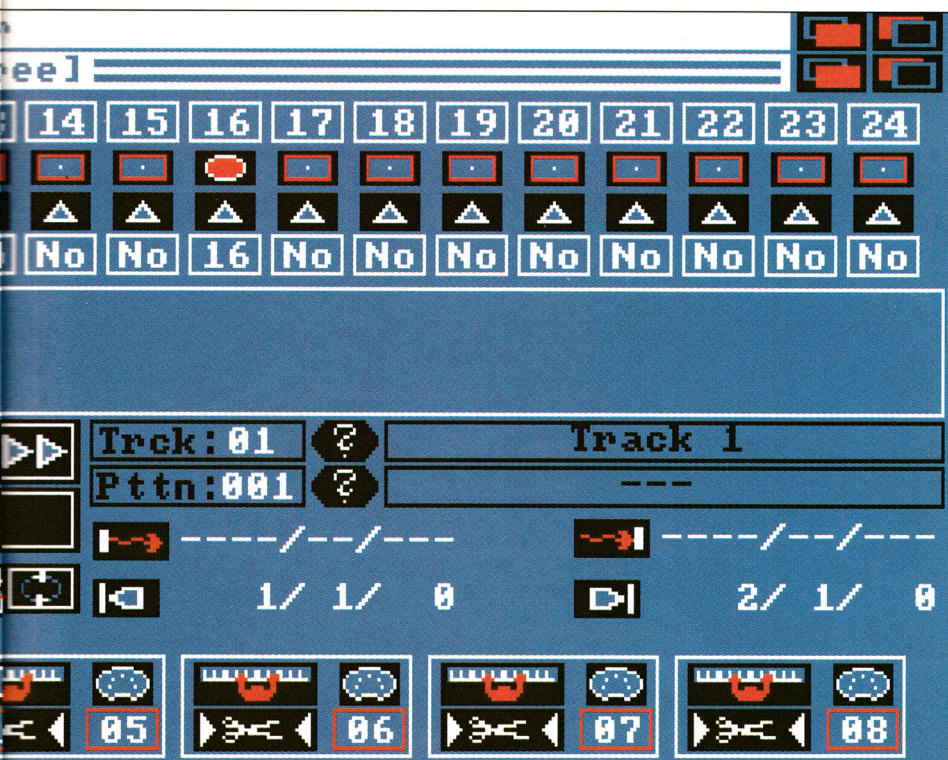
**MIDI Mixer** Similar to the *AutoMix* facility in KCS 3.0, the Pro-24 MIDI mixer simulates a conventional, and rather expensive, mixing console.

**Echo Generator** – Just as the name suggests, this *echos* notes, allowing you to create reverb and delay effects.

Using Mix mode, Pro-24 retains what ever is already stored in the track, making it possible to “layer” sequences.

Finally, we have auto mode (which other sequencers called *Punch in/Punch out*). Once selected, Pro-24

# and Waterman?



will automatically start recording your key depressions as soon as you hit the keyboard.

This mode makes it possible to make changes to existing sequences as they are playing. Once again, all pretty standard stuff.

If you own a keyboard with a built-in sequencer like the Korg M1 (the keyboard I use) it's nice to be able to dump sequences straight into your computer-based sequencer without having to mess around playing each track in turn.

Using a system of subtracks, Pro-24 makes it possible to record from up to eight MIDI channels simultaneously. Not only that, but you can designate where the data from each channel is to be sent, making it possible to split a multi-channel sequence into several tracks automatically as it is playing. Very nice.

In addition to the 24 tracks for



# Cat and mouse



**Sometimes the**  
SO WHEN ITS LIFE OR DEATH  
**Situation Allows**  
CONFLICT ON YOUR COMPUTER GAME  
**No Second**  
YOU CAN RELY ON CONTRIVER!  
**Chances . . .**  
BREEDER OF SMART MICE!

By







recording normal performance data, Pro-24 has an extra supervisory track called *Master Track*.

This cannot store music data, but instead is used to hold time signature and tempo information, therefore allowing both the tempo and time signature to be changed many times within a piece.

Amiga sequencers have always been rather weak where composing percussion parts is concerned: Even MusicX failed to address this problem.

But now Pro-24 comes to the rescue with a unique drum editor that is sure to win it favour among many musicians. In truth, the drum editor isn't really that much different from the grid editor, so most musicians have probably been getting along fine

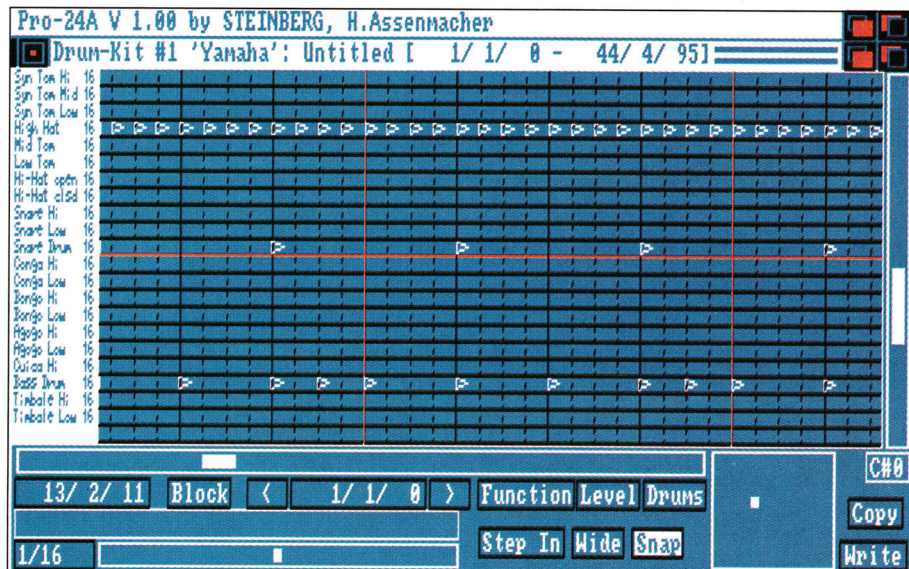
with what they already have.

Songs are built up by pulling together several sequences using a reference track. To make this task somewhat easier, Pro-24 offers an *Arrange* window that does just that – it arranges songs.

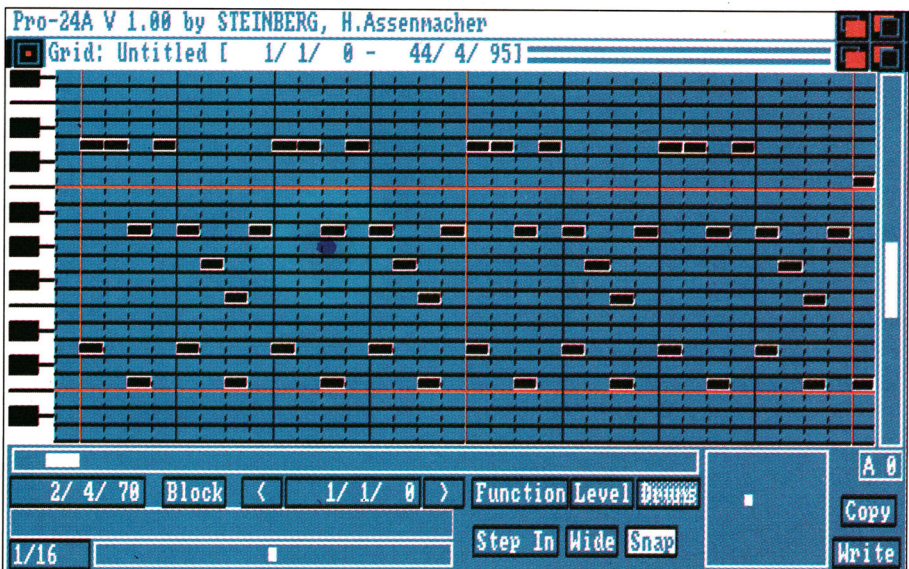
Just like the Master Track, this reference track does not include actual music data. Instead, it contains cue points that specify when Pro-24 should play particular patterns.

For the experienced MIDI musician, this system will more than adequately handle the task of song arrangement, but I couldn't help feeling that many others could easily be overwhelmed by what is undoubtedly a rather unfriendly system.

Steinberg have put a lot of work into



Adding drums is so simple Phil Collins could do it ...



The grid editing screen

## MUSIC MATTERS

**MIDI – Musical Instrument Digital Interface** – the protocol that allows you to connect your musical keyboard to your computer. Physically it looks like a 5 pin DIN plug.

**SYSTEM EXCLUSIVE** – Also known as *SysEx*. SysEx is the “loophole” in the MIDI protocol that was deliberately included to allow individual instrument manufacturers to design their own extensions to the MIDI language. This enables instruments of the same type to talk to each other through MIDI even when there are other incompatible instruments connected to the same MIDI network. **SMPTE** (Pronounced “SIM-TEE”) – The full name is actually SMPTE/EBU (which stands for “Society of Motion Picture and Television Engineers/European Broadcasting Union”). SMPTE is a system which allows music to be synchronised to film.

**MIDI TIME CODE** – Yet another synchronising system that is used specifically to synchronise MIDI instruments. Pro-24 offers support for both these synch'ing systems.

**QUANTISATION** Most music assumes an underlying regular pulse on which the timing of each note is based. A quantiser corrects any timing errors within a sequence by aligning notes with this pulse, therefore giving the sequence a smoother and more regular feel.

**TRANSPPOSITION** – Transposing a sequence allows it to be played in a different key from that of which it was recorded in. For example, transposing a sequence by +12 knocks it up an octave.

**MIDI CONTROLLERS** – MIDI Controllers are a bit like SysEx messages, but instead of only being able to be understood by instruments of the same make and model, they can be understood by all MIDI instruments. They allow you to control such properties as the volume or modulation of an instrument and the ability to pitch bend notes.

**PPQN** – Stands for *Pulses Per Quarter Note*. All sequencers use a very high resolution clock that times each MIDI event as and when it happens. A single PPQN is the smallest possible unit of sequencer time. In general, the higher the PPQN, the more realistic the recording.



Pro-24, and it shows. Years of development have honed it into one of the most capable systems available. Combining powerful editing features with extensive recording and sync'ing options, Pro-24 is a worthwhile consideration which should not be ignored.

However, it certainly isn't perfect – after all, Steinberg themselves have improved upon it drastically with their latest ST sequencer, *Cubase*.

What really lets Pro-24 down is its song composition tools. It would have

been nice if Steinberg had included some form of graphical *Arrange Page* such as the one they now include within *Cubase*. Even better, perhaps Steinberg should have gone all the way and produced instead an Amiga version of *Cubase*...

The company have gone to great lengths to try and convince us that Pro-24 is a very high resolution sequencer. Unfortunately, this just isn't true – clocking in at just 96 ppqn, it is 100 pulses short of *MusicX* and almost 200 short of the latest version of Dr.T's *KCS*.

For most of us, such technicalities won't make a great deal of difference to our music making, but for Steinberg to make such a claim is somewhat misleading.

With the news of *MusicX 2*, the choice between Pro-24 and the rest is no longer so simple. If *MicroIllusions* hurry up and get their new release on the streets, I can see Pro-24 having to fight hard for sales.

But gripes aside, Steinberg's system definitely delivers – if you're after a studio proven system, Pro-24 is definitely worth investigating.



The score editing screen: What a let down

If you're anything like me, you rely heavily on the editing functions provided by your sequencer – after all, we can't all be brilliant keyboard players.

As well as the usual quantising and transposition tools, Pro-24 offers a number of extra editing facilities that are quite unique. These include *Remove Empties* which erases empty patterns, therefore freeing up valuable ram) and *Delete Doubles* which deletes any events that have been recorded twice.

One of the most powerful functions is the *Logical Editor*, which manipulates music data using mathematical operations.

Although complex and rather hard going, it is perhaps the most powerful editing function that Pro-24 has to offer.

These bells and whistles are all very nice, but there's nothing like being able to actually *see* your music. Pro-24 offers what it calls a *Grid Editor*, which is really no different to the *Bar Editor* within *MusicX*.

For those of you who haven't used such an editor, they basically represent the notes within your sequence as a series of lines of varying lengths – the longer the duration of a note, the longer the line.

By just clicking on the notes you're interested in, you can insert, delete, copy and paste them to your heart's content. You can also alter various MIDI controllers from within this editor.

Finally, we come to the score display facility – and what a let down this is. Amiga musicians have been crying out for a decent score editor, but Steinberg have reduced the Pro-24 scoring facility to a point where it is practically useless.

The ST version of Pro-24 included rudimentary score editing, but all these have been hacked out in Amiga Pro-24. As it is, all you can do is view your sequence as a score – and that's it. If you want to edit your music in score format, you're still going to have to fork out for a package such as Dr.T's *KCS*.

## REPORT CARD

### PRO-24

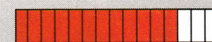
Evenlode Soundworks 0993 898484  
£285.95

#### EASE OF USE.....



Rather unfriendly at first, but you'll soon get used to Pro-24's quirky ways.

#### FEATURES.....



Almost everything you could possibly need from a sequencer is here. Would have been nice if Steinberg had included a graphical arrange page, also Scoring facility is too limited to be useful.

#### VALUE .....



With *MusicX* coming in at almost £60 less than Pro-24, Steinberg may be well advised to reconsider their current pricing policy.

## OVERALL

80%

Pro-24 is a rather unfriendly system, but it undoubtedly gets the job done. Personally, I'll stick with *MusicX* and look forward to the possibility of Amiga *Cubase*.



# ATARI ST and AMIGA

## Sixteen Bit Superdeals from the Sixteen Bit Specialists!

CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier



### 520STE Power Pack

**£349.00**

inc. VAT and Next Day Delivery

#### PowerPack includes:

- ★ 520 STE 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ Over £550 worth of games software, including OutRun, Gauntlet 2, R-Type, Space Harrier, Super HangOn and 16 more Top Games
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE.
- ★ First BASIC and First Music Utility Software.
- ★ FREE JOYSTICK AND FREE MOUSE MAT WORTH £4.95.
- ★ All leads, manuals PLUS MOUSE and free mains plug!

### 520STFM DISCOVERY PACK

**£279.00**

**NEW!**

#### NEW! fantastic value for money pack includes:

- ★ 520 STE 512K memory keyboard with built in 1 megabyte double sided disk drive and TV modulator
- ★ Game Pack including OUTRUN, SPACE HARRIER, CARRIER COMMAND and BOMB JACK
- ★ UTILITY PROGRAMMES inc STOS GAME CREATOR, NEOCHROME painting package and FIRST BASIC programming language
- ★ ST tutorial programme and 'DISCOVER YOUR ST' beginners guide to the ST computer
- ★ PLUS MOUSE, MOUSE MAT, MANUALS, ALL LEADS, METACOMCO BASIC AND MAINS PLUG!

### 1040STE BUSINESS PACK

**£449.00**

- ★ Includes the new 1 megabyte 1040STE keyboard plus over £200 worth of business software including K-WORD wordprocessing software, K-CALC spread sheet and K-DATA Database software. Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.

### MEGA 1 BUSINESS PACK

**£529.00**

#### Features:

- ★ Separate Keyboard and System Unit
  - ★ Inc. all software supplied with 1040 STE Business Pack.
  - ★ Blitter chip installed for faster graphics
- Inc SM124 Mono Monitor.....£628.00

#### ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DS DD Disks
Competition Pro 5000 Joystick....£13.95	Box of 10.....£13.95
Competition Pro with Autofire.....£14.95	Memorex Disk Box
Konix Speedking Joystick.....£11.95	For 40 3.5" Disks.....£8.95
Red Mouse Mat with Amiga logo...£5.95	Amiga 1/2 Meg Expansion.....£99.95
Plain blue Mouse Mat.....£4.95	Control Centre Atari or Amiga.....£44.95
Naksha Mouse for ST, Amiga or PC.....£29.95	
Contriver Amiga and ST Mouse with FREE holder and Mouse Pad.....£20.95	

#### PRINTERS

Star LC10 including interface lead for ST/Amiga.....£169.00
Star LC10 colour including interface lead for ST/Amiga.....£219.00
Star LC24-10 24 pin including lead for ST/Amiga.....£249.00
Citizen 120D + NLQ including interface lead for ST/Amiga.....£139.00
Citizen Swift 24 pin letter quality including lead for ST/Amiga.....£309.00
Colour Version of Swift 24 pin.....£349.00

### AMIGA A500 SCREEN GEMS PACK

featuring the exclusive new DIGISTAR pack!  
**£399.00**

**NEW!**

Inc. VAT and Next Day Delivery

#### SCREEN GEMS PACK includes:

- ★ Amiga A500 512K Keyboard with built-in 1 Megabyte double aided disk drive.
- ★ Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ Amazing 4096 colour graphics and incredible Digital Stereo Sound
- ★ Deluxe Paint II painting package worth £70!
- ★ Outstanding new Shadow of the Beast II game with breathtaking graphics!
- ★ New Days of Thunder game based on the Stock Car racing film
- ★ Back to the Future II game based on the film
- ★ Night Breed adventure game
- ★ Amiga Basic, Amiga EXTRAS 1.3, Workbench 1.3 & Step by Step Tutorial
- ★ ...and the incredible exclusive DIGISTAR pack including:  
10 blank disks and disk box, high quality mouse pad, joystick - PLUS £224.50 worth of extra games software comprising:

TITLE	SOFTWARE HOUSE	CATEGORY OF GAME	RRP
DATASTORM	VISIONARY DESIGN	ARCADE Space action fighting game	£19.95
DUNGEON QUEST	GAINSTAR	GRAPHIC ADVENTURE Exploration adventure with graphics	£24.95
E-MOTION	US GOLD	ARCADE Ball based puzzle game	£19.95
GRAND MONSTER SLAM	RAINBOW ARTS	SPORTS SIMULATIONS Football contest using animated monsters	£19.95
KID GLOVES	MILLENIUM	ARCADE Action adventure hack and slash game	£24.95
POWERPLAY	ARCANA	BOARD AND STRATEGY Graphical quiz game	£19.95
RVF HONDA	MICROSTYLE	ADVANCED SIMULATION Motorbike simulation	£24.95
SHUFFLEPUCK CAFE	DOMARK	ARCADE High tech air hockey game	£19.95
SOCCER	MICROPROSE	SPORTS SIMULATION Realistic soccer simulation game	£24.95
TOWER OF BABEL	FIREBIRD	ADVANCED SIMULATION Interactive strategy game with 3D graphics	£24.95

### AMIGA 2000 IBM PC AND AMIGA COMPATIBLE TWO COMPUTERS FOR THE PRICE OF ONE! **£1349 (inc VAT and next day delivery)** **(£1173.04 exc. VAT)**

#### FEATURES:

- ★ Separate keyboard & System Unit
- ★ 1 Megabyte RAM - expandable
- ★ Built-in 3.5 Disk Drive loads Amiga Software
- ★ Built-in 5.25 Disk Drive loads IBM Software
- ★ Built-in 20MB Hard Drive stores IBM & Amiga Software
- ★ 4096 Colours & Digital Stereo Sound
- ★ Runs IBM software with built-in XT Bridgeboard
- ★ IBM and Amiga Expansion Slots

#### EXTERNAL DISK DRIVES

Atari SF314 1 Megabyte.....£139.00
Amiga A1010 1 Megabyte.....£99.95
Cumana 1 Megabyte Atari or Amiga.....£89.95
NEC 1 Megabyte Atari or Amiga.....£79.95
Atari Megafile 30 Hard Disk.....£439.00
New! Commodore A590 20 meg hard disk.....£369.00
A590 Hard Disk & Memory Upgrade installed.....Phone

#### MONITORS

Commodore Amiga A1084 Stereo Colour Monitor inc. lead.....£259.00
Atari SC1224 Colour Monitor inc. lead.....£259.00
Atari SM124 Mono Monitor including lead.....£119.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga.....£249.00

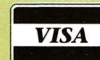
24 HOUR CREDIT CARD HOTLINE ☎ 0908 378008

To order: either call the orderline above with your credit card details OR make a cheque/PO payable to: Digicom Computer Services Ltd and send it with your order to the address below. Showroom open at the address below. Mon.-Sat. 10am - 6pm

## DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ

All prices include VAT and next day delivery by courier.  
Licensed Credit Brokers \* Written quotations available on request APR 34.5% Variable





# A NEW WORLD OF POWER

THE ANSWER  
TO YOUR  
DISK  
DUPLICATION  
PROBLEMS

FOR ONLY

**£34.99\***  
\*PC VERSION £69.00

AVAILABLE FOR

- AMIGA
- ST
- PC COMPATIBLES

THE

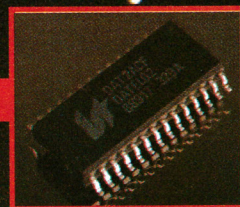
## SYNCR0 EXPRESS II

IS HERE!

- SYNCRO EXPRESS IS A HIGH SPEED DISK DUPLICATION SYSTEM THAT WILL PRODUCE COPIES OF YOUR DISK IN AROUND 50 SECONDS!!
- Syncro Express requires a second drive & works by controlling it as a slave device & ignoring the computer disk drive controller chip whereby high speeds & great data accuracy are achieved.
- Menu driven selection for Start Track/End Track - up to 80 tracks. 1 side, 2 sides.
- Very simple to use, requires no user knowledge.
- Also duplicates other formats such as IBM, MAC etc.
- Ideal for clubs, user groups or just for your own disks.
- No more waiting around for your disks to copy.
- Probably the only duplication system you will ever need!

### THE LATEST CUSTOM LSI CHIP TECHNOLOGY

By using an on-board Custom LSI Chip, Syncro Express has the power to transfer an MFM image of the original disk directly to your blank disk - quickly, simply and without any user knowledge. One external disk drive\* is required for AMIGA/ST.



**SYNCR0 EXPRESS IS AVAILABLE FOR THE ST/AMIGA/PC SYSTEMS - PLEASE STATE WHICH REQUIRED WHEN ORDERING**

**WARNING 1988 COPYRIGHT ACT WARNING**

Datel Electronics Ltd., neither condones nor authorises the use of its products for the reproduction of copyright material.

The backup facilities of this product are designed to reproduce only software such as Public Domain material, the users own programs or software where permission to make backups has been clearly given. It is illegal to make copies, even for your own use, of copyright material, without the express permission of the copyright owner, or the licensee thereof.

**\*If you don't have a second drive we can supply SYNCRO EXPRESS together with a drive for**

**ONLY £104.99 (AMIGA)**

**ONLY £119.99 (ST)**

HOW TO GET YOUR

**SYNCR0 EXPRESS II**

**TELEPHONE (24 Hrs) - 0782 744707 - CREDIT CARD ORDERS**

WE WILL DESPATCH YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR PURCHASE WITHIN DAYS, NOT WEEKS.

ORDERS NORMALLY DESPATCHED WITHIN 48 Hrs. ALL CHEQUES/POSTAL ORDERS MADE PAYABLE TO...



**DATTEL ELECTRONICS LTD.,**

**GOVAN ROAD, FENTON INDUSTRIAL ESTATE, FENTON, STOKE-ON-TRENT, ST4 2RS, ENGLAND**  
**TECHNICAL/CUSTOMER SERVICE 0782 744324**





# THE POWER BREAKS THROUGH...

## AMIGA ACTION REPLAY™

ONLY  
**£59.99**  
POST FREE

THE WORLD'S  
MOST POWERFUL  
FREEZER-UTILITY  
CARTRIDGE IS HERE

**JUST LOOK AT THE UNMATCHED RANGE OF FEATURES**

■ **AMIGA ACTION REPLAY SIMPLY PLUGS INTO THE EXPANSION PORT OF YOUR AMIGA 500 AND GIVES YOU THE POWER TO FREEZE MOST ANY PROGRAM, THEN YOU CAN:-**

■ **SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK**

Special compacting techniques enable upto 3 programs to fit on one disk. Unique FDOS power means that the programs reload at upto 4 TIMES FASTER than Amiga Dos - even independantly of the cartridge.

■ **UNIQUE INFINITE LIFE/TRAINER MODE**

Allows you to generate more and even infinite lives, fuel, ammo etc. Perfect as a trainer mode to get you past that "impossible" level. Very easy to use.

■ **SPRITE EDITOR**

The full sprite editor allows you to view/modify the whole sprite set including any 'attached' sprites.

■ **VIRUS DETECTION**

Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.

■ **SAVE PICTURES AND MUSIC TO DISK**

Pictures and sound samples can be saved to disk. Files are IFF format suitable for use with all the major graphic and music packages.

■ **SLOW MOTION MODE**

Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

■ **RESTART THE PROGRAM**

Simply press a key and the program will continue where you left off.

■ **FULL STATUS REPORTING**

At the press of a key now you can view the machine status. Including Fast Ram, Chip Ram, Ramdisk, Drive status, etc.

**PLUS THE MOST POWERFUL MACHINE CODE FREEZER/ MONITOR**

**MORE FEATURE THAN YOU COULD EVER NEED. HERE ARE JUST SOME;**

- Full M68000 Assembler/Disassembler
- Full screen editor
- Load /Save block
- Write string to Memory
- Jump to specific address
- Show Ram as text
- Show Frozen picture
- Play resident sample
- Show and edit all CPU registers and flags
- Calculator
- Help command
- Full search feature
- Unique Cutom Chip Editor allows you to see and modify all chip registers-even write only registers
- Notepad
- Disk handling - show actual track, Disk Sync pattern Etc.
- Dynamic Breakpoint handling
- Show memory as HEX, ASCII, Assembler, Decimal
- Copper Assemble/Disassemble.

**REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE WITH ALL MEMORY AND REGISTERS INTACT.-INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISATIVE!**

**HOW TO GET YOUR AMIGA ACTION REPLAY...**

**TELEPHONE (24 Hrs) - 0782 744707 - CREDIT CARD ORDERS ONLY**

WE WILL DESPATCH YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECIEVING THE BENEFITS OF YOUR PURCHASE WITHIN DAYS, NOT WEEKS.

ORDERS NORMALLY DESPATCHED WITHIN 48Hrs.

ALL CHEQUES/POSTAL ORDERS MADE PAYABLE TO...

**DATel ELECTRONICS LTD.,**

**GOVAN RD., FENTON INDUSTRIAL ESTATE, FENTON, STOKE-ON-TRENT, ST4 2RS, ENGLAND**

**TECHNICAL/CUSTOMER SERVICE 0782 744324**





# Amiga Arcade

## Rainbow Arts

LIKE most of this month's *Amiga Arcade*, this story has been compiled after spending four days at the Computer Entertainment Show, held recently in Earl's Court, London.

Due to circumstances beyond his stomach's control, poor Green was forced to miss several appointments with software houses. This was not due (as several cruel rumour-mongers have insinuated) to self-induced liquid poisoning, rather to some dodgy mince eaten the day before.

But enough about Green's digestive system: On with the show!

Rainbow Arts were one of the companies which Green missed talking to, and what a missed opportunity it was too. The – and here I quote the remaining members on the Interactive stand –

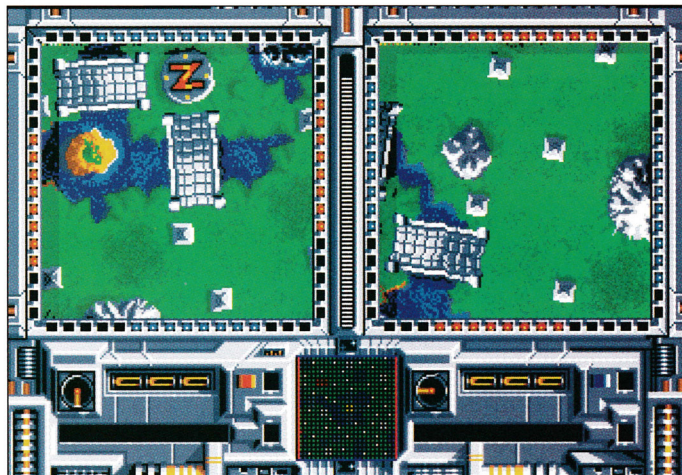
“stunningly beautiful” PR person Nicola Hemming was going to give him the details on all the latest games. Poor old Aj had to talk to her instead.

Remember *Ballblazer*? Remember thinking that 8 bit machines shouldn't be able to do things like that? Well, it's back, but this time it's on an Amiga and it's called *Masterblazer*.

Now you can have tournaments with up to eight players taking part, all accompanied by some of the smoothest graphics and most amazing sound ever (apparently). In fact, according to Nicola “It's so hot, your joystick will melt.”

Some sort of gloves would seem to be in order when you rush out with your £24.99 later this month.

Also from Rainbow Arts is the equally fabby looking *Rotator*. It uses what certainly appears to be



a similar, but more advanced, system to US Gold's *Rotorscope* (as used in *Rotor*).

The graphics operate at a pixel level instead of a vector system, and the animation rate varies

between 7 and 14 frames per second instead of about 5 and a bit.

We're not sure what this one will do to your joystick, but it should be in your local store at £19.99.

## Gonzo games

REMEMBER *Wipe Out*? Yes you do – we gave it a gong award 'cos Aj liked it so much. Well, here's some good news: It's back again.

Or almost, for what we have here is a subtle re-work to produce *Street Hockey*. We men-

tioned it last month, but it looks so good we thought we would mention it again.

Besides, it gives us an excuse to use this silly photo of the guys (and gal) responsible. If “responsible” is the right word.



HERE is an interesting story, not only for games players, but for games programmers.

You must remember the BitMap Brothers, and you must also remember the enviable reputation they have gained for producing Amiga software of the highest possible standard. You may also know that for their game *XenonII* they used music composed by the group “Bomb the Bass”.

What you may not know, is that this link-up between the music and leisure software industries has spawned something new and wonderful: A new type of Games label which takes its lead from the music biz.

*Renegade* is the name of the

company formed from the cumulative talents of the BitMap bros and Rhythm King Records.

“The new company will treat programmers differently”, said PR person Adele. “Instead of some sort of disposable commodity, they become artists in their own right. They have a say in the packaging of their games. They also get a very healthy cut of the profits.”

There are two games coming soon from Renegade: The first will be “*Gods*” to be released in January, closely followed by “*Magic Pockets*”. *Amiga Computing* will be watching the new label closely, as it considers such a development to be long overdue.



# AMIGA



***The art of timing:  
Jolyon helps cure  
you of the flickers***



***Paul Holmes takes  
us inside an IFF  
file with his cover  
disk program***

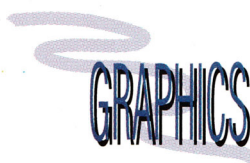
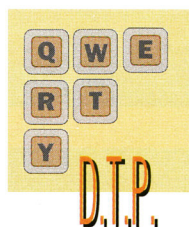
***Stuck for a  
sequencer? Jason  
Holborn looks at the  
higher end of the  
music market***



***Armitage describes  
the best way to get  
the latest software***



***As Nic discovers,  
you don't need a  
big budget to get  
professional quality***



***DPaint brushes  
get everywhere  
when Dave Mee  
is around***



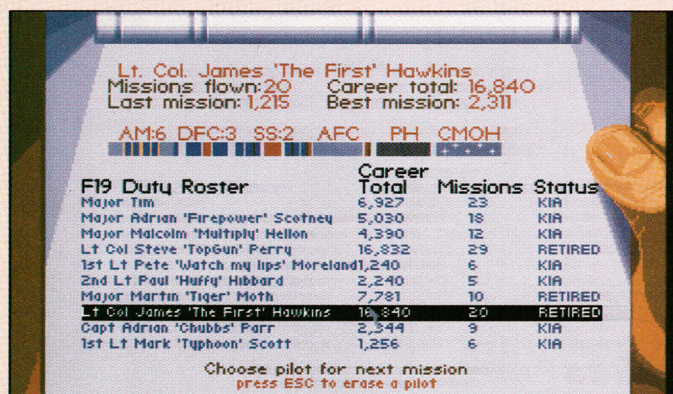
***AMAL is the animation  
language which makes  
AMOS special, says  
Peter Hickman***

AMIGAZINE



# F-19 STEALTH FIGHTER

They seek him here...



The duty roster details each pilot's performance, and also allows you to compare your pilot with the others in your squadron



**B**AH, pranged again. And after a successful mission as well. I'd just finished blasting villages and tank farms along the Libyan coast, had sunk a couple of ships, and was maneuvering to land back on the US carrier when disaster struck. The engine stalled.

Not a fatal occurrence unless you happen to be flying at 200 feet, which is what I was doing at the time. Still at least it was only a training mission. After being warned not to try it again in real life and given a combat readiness strip, I was ready for my next mission.

Or I thought I was. Oops, killed in action said the roster, just after my supposedly dead body had been cleared for combat service. Bit of a bug there methinks, but thankfully the rest of F-19 Stealth Fighter makes up for it.

If you thought Ocean were somewhat mean with their skimpy packaging for F-29 Retaliator (the aircraft that will never see active service) you have a treat in store with this Microprose game.

The box is huge, the manual thick, slickly produced and glossy, and there's a couple of maps and a keyboard overlay to help you master one of the world's most sophisticated aeroplanes.

It may be a complex plane, and a ditto game, but getting into the air is easy enough so you won't be spending three hours reading the manual before you can take off.

You'll want to at some point though, otherwise you won't have a clue as to what's going on.

F-19 Stealth Fighter offers four theatres of operation: That new American favourite, Libya, the

frighteningly topical Persian Gulf – though the designers have missed out by not including countering an Iraqi invasion – the North Cape, and good old Central Europe. Initially you will be offered training missions in which the enemy cannot hit you and you cannot crash, though this can be changed straight from the start. There are more than 4,000 different missions to be undertaken, though just how different some of them are is debatable.

Before taking off the four weapons bays of the F-19 need to be filled up, and here the program scores highly. Virtually every missile and bomb you could wish for is available.

The ground crew recommends your ordnance, but this can be changed to whatever you like. The back of the manual contains a welter of information on weapons systems, so even if you aren't au fait with missiles and bombs you can

check up and choose for yourself.

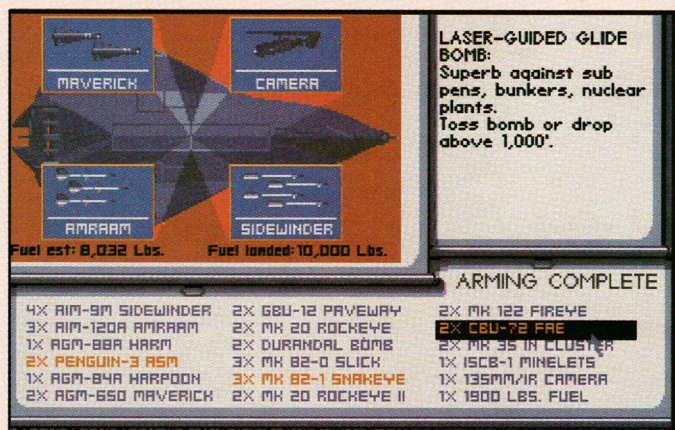
This should be done because in the mission detailed above the ground crew installed a Maverick thermal imaging ground to air missile, which is acceptable against ships.

What I really needed, and did install, was a Harpoon, sea-skimming, radar and inertial guided

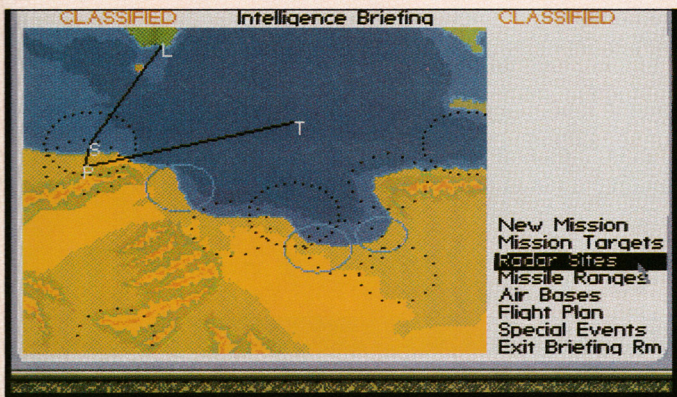
missile. This is the standard anti-ship missile of the navy and air force.

As mentioned earlier, taking off is easy, as is maneuvering and flying level. Mastering the techniques of maximising the F-19's radar invisibility attributes takes practice though.

Thankfully the excellent man-







*There are four mission scenarios in all, each one being divided into another three types. In all, this allows you to fly 4,000 different sorties*

ual will guide you through fooling radar, avoiding missiles, strafing ground targets from 3km, and tackling hostile warplanes.

Unlike most other flight sims, the F-19 pilot needs to concentrate on remaining undetected until the target is reached, and then becoming invisible again after leaving the area.

Old Microprose hands will welcome the various medals and awards handed out after increasingly successful sorties.

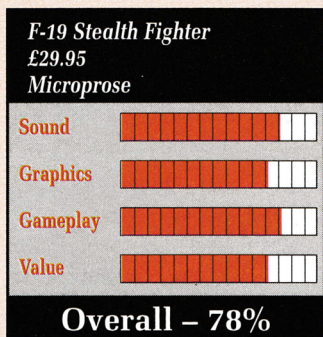
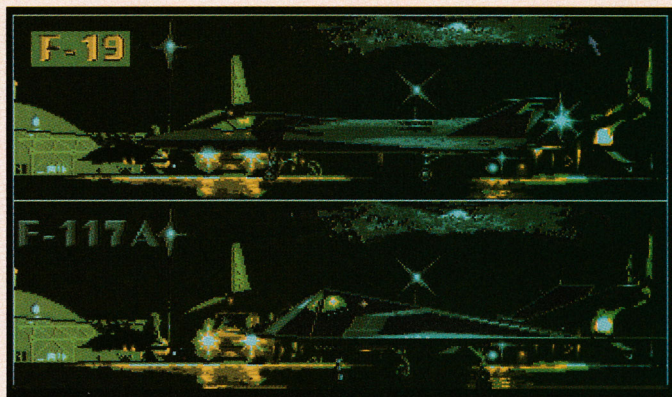
The speed of animation is impressive in F-19. Flying at low altitudes the scenery just whistles by, unlike F-29 Retaliator. Sound effects are generally good, but when you are flying a silent fighter you don't expect to hear much until the action starts.

F-19 Stealth Fighter has class written all over it. The graphics are pretty good, if not quite as glossy as the recent competition, though they are fast and the round-the-

plane views are excellent. For those who want a strictly fly, shoot, have fun game then the Ocean sim is more in your flight path.

On the other hand, if you want a superb, sophisticated, enjoyable, complex and action packed simulation then you want a copy of F-19, a sim from the people who really know about sims.

Duncan Evans

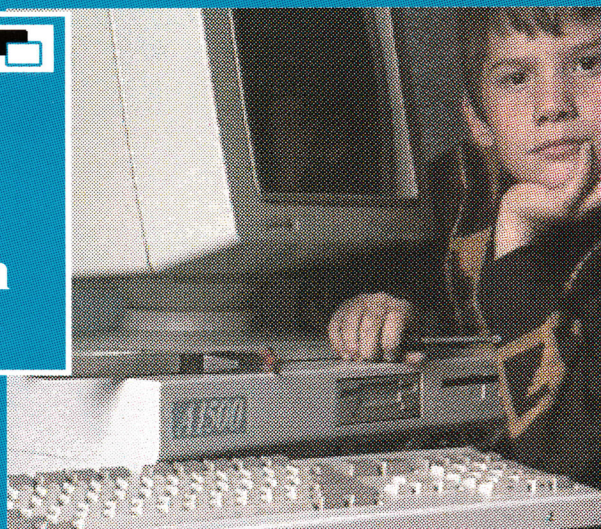


*Bogeys at your six! The Migs follow your stealth, attempting to destroy – either turn and shoot or disappear!*





Checkmate Digital bring you the  
Ultimate peripheral for the A500.  
The A1500 Mini-Workstation



A1500 Base Unit	£230.00
Internal 86 Pin Slot	£ 69.00
Internal Quiet Fan	£ 24.95
A590 Hard Drive	£389.00
A590 with 2meg ram	£499.00
A500 Flight Pack	£389.00
3.5 inch Floppy	£ 79.95
1084 Stereo Monitor	£249.00
Microway Flicker Fixer	£299.00
Above for A500	£349.00

Ring For Ram Chip Prices

eg. 256x4 (A590 etc)

£56.00 / Megabyte

We can supply CSA 68030 33mhz

Mega midget Racer, A5000 beater.

With 50 mhz 68882 Maths Chip.

Everybody is talking about Checkmate's A1500, and no wonder. By using the Standard Amiga A500, you can now assemble a real Mini-Workstation. Using the A1500 and newly released internal 86 pin expansion slot, a system of real power and versatility can be built on a tight budget. If your application is CAD or DTP then you can add the Microway Flicker Fixer for a rock steady display on any VGA monitor. Add to this a hard disk controller, extra memory, a high speed hard drive or two, and you have real power, all in one neat, small footprint.



80 Mildmay Park, London, N1 4PR

Tel 071-923 0658

Fax 071-254 1655







## The Colder War

AHH! Tahiti, the cool winds, golden sand and the beautiful aqua. What a way to take a holiday, just lying on the sun-drenched sand, soaking up the glorious rays of the daystar. And the girls! Wow! Ah! this is the life, think I'll have a swim.

What's this magazine? Hmm, the oil crisis worsens with a war imminent. US and Russian military build-up as the dispute heats up. The US ambassador has been kidnapped - if the terrorists' demands are not met they will shoot him through the head and leave his body on the steps of the US embassy.

A message from General Braxton awaits you in the reception room of the holiday village on the edge of the island. You are summoned to Washington immediately where you will be briefed and dispatched with one objective. Severely inconvenience the US ambassador's captives and bring him back - alive!

The operation, code name Iceman, must be handled with the greatest care lest it all ends disastrously.

This is a bit of a breakaway from the standard Sierra adventure. Although the game begins with the usual play-style of Sierra, it soon changes to a bit of a simulation as you enter a sophisticated submarine to gain access to the terrorists.

But first you must find you way about Tahiti. After falling off my stool in a blind drunken stupor after buying this pretty girl a few drinks I realised that this was not Leisure-suit Larry I was playing here and restarted.

Although the graphics are not exactly what you would expect from an Amiga, they are reasonable and very colourful. The tropical music that drifts across the island and the more rock style that's at home in the bar is very good and you can hear different instrumental sounds.

The beginning became quite tedious for me. I found myself wasting a vast amount of time strolling across three or four screens time after time.

Although Code-Name: Iceman requires at least 1Mb of RAM, the software doesn't keep many screens in memory, and constant disk accessing slows things down quite dramatically. In fact I got very bored waiting for the scenery to

change all the time. Many of the computer's responses take quite a while to appear, too.

There are few new additions to the Sierra game-play method. Previously, if you wanted to look at a particular thing, you would have to walk to it first then type the command.

Now in many cases you can simply look at an object from a distance, else your character will walk towards it. Many doors will now open for you when you approach them to avoid having to type "open door" – a great improvement, I'm

sure you'll agree. As usual the packaging contains all the documentation necessary to enable you to navigate your way about the game. An (apparently) authentic submarine navigation chart of the Western Hemisphere accompanies the game and proves invaluable when you get to your single seater USS Black Hawk submarine.





Equipped with eight harpoon radar seeking missiles, torpedoes and sea mines, this underwater military vessel carries up-to-the-minute technology.

Iceman really should be played

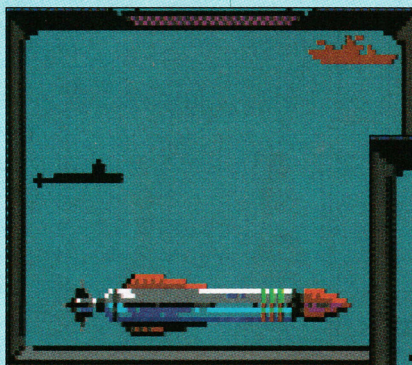
from a hard disk, but with five floppies in the package, it's going to swallow a large portion of your A590! Still, if you are prepared to wait for the game to access itself, I believe it's worth it.

## Andrew Banner

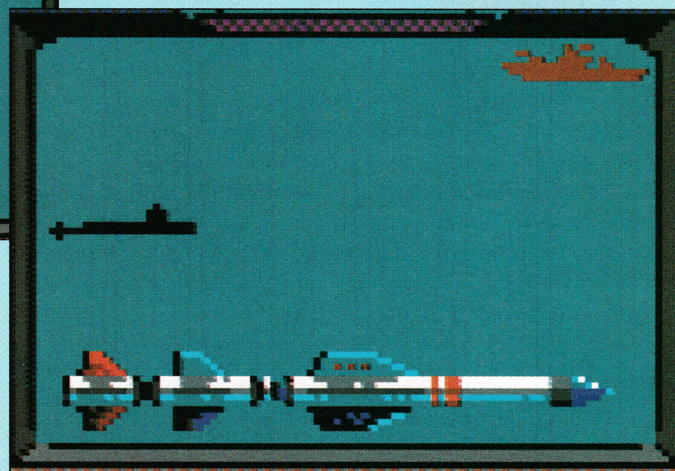
**Codename Iceman**  
£29.95  
Sierra/Activision

<b>Aura</b>	
<b>Graphics</b>	
<b>Gameplay</b>	
<b>Value</b>	

**Overall – 76%**



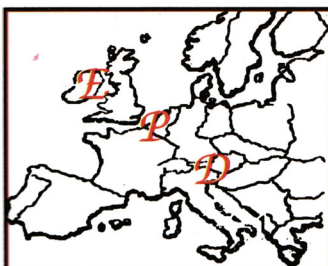
*The Blackhawk's arsenal includes three types of torpedo, each one producing devastating effects on impact*



*Iceman is Sierra's first quest to combine a tough adventure with a combat simulator. The Blackhawk's control panel is neatly laid out, and should cause no problems when trying to navigate whilst in the midst of battle.*







## EUROPEAN PERIPHERAL DISTRIBUTION

ALL PRICES INCLUDE V.A.T.  
Add £3.95 For Post & Packaging  
Next Day Courier £9.95

Please make cheques payable to E.P.D.

CORPORATE EDUCATION & TRADE  
ENQUIRIES WELCOME

Peripheral House  
DEPT A6, Unit 36 Cranford Gardens  
Compton Acres  
West Bridgford  
Nottingham  
NG2 7SE

Telephone (0602) 841640

## 3 1/2" Discs from 29p SONY Standard Japanese

all our discs are 100%	50.....	42p .....	39p
certified error free	100.....	41p .....	38p
with a no quibble	500.....	40p .....	35p
lifetime warranty!!!	1000.....	38p .....	32p
	5000.....	36p .....	29p

If you can see any other company advertising discs at a more competitive price we guarantee to beat that price or you can have the discs free!!

### ACCESSORIES

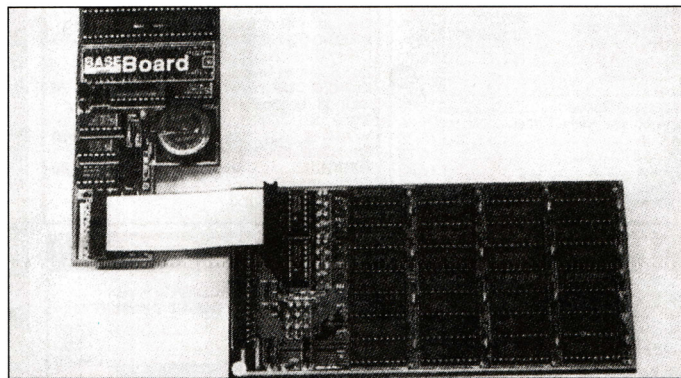
Roll 1000 labels .....	£6.95
50 Cap. Box.....	£3.95

100 Cap. Box.....	£4.95
256K x 4 DRam .....	£29.95 per 1/2 meg
1.3 Rom.....	£29.95

1/2 meg upgrade .....	£35.00
with clock .....	£39.95

3 1/2" Drive Slimline .....	£59.95
Amiga's from.....	£359.00
1 meg Amiga's from.....	£395.00

## A500 4MB Ram expansion for under £100!!!



Unpopulated .....	£99.95
512K populated .....	£124.95
1Mb populated .....	£149.95
1.5Mb populated .....	£174.95
2Mb populated .....	£199.95
2.5Mb populated .....	£224.95
3Mb populated .....	£249.95
3.5Mb populated .....	£274.95
4Mb populated .....	£299.95

## 4 to 6 Megabyte Memory Board for the A500

The BASEboard is a memory upgrade card for the Amiga A500. It provides a battery backed clock and allows you to increase the memory of your Amiga to as much as 4.5 megabytes. If you need more just add the 2 megabyte XRAM daughter board and expand to a total of 6.5 megabytes. All without using the expansion bus. The memory can be increased in 512K increments by adding industry standard low power 256K X 4 (DIP) DRAM chips in the sockets provided. The BASEboards unique design allows contiguous memory blocks of 2 megabytes for the professional video user and dedicated game player. The BASEboard is fully compatible with both the 512K (Fat) and 1mb (Fatter) versions of the Agnus chip. It supports all versions of Kickstart and all revisions of the A500 mother board that installs in the A501 slot and the "Gary" socket. The ultra quiet multilayer memory board insures data integrity. The Baseboard upgrade gives you A2000 memory power at A500 prices

### FEATURES :

- 4 megabyte increase in memory
- 2 megabyte daughter board increases total to 6 megabytes.
- Memory boards fits in A501 slot in base of A500
- Battery backed up clock
- Multi-layer (4) memory board insures data integrity
- 100% compatible with all Amiga software
- Supports Kickstart 1.2/1.3 and all revisions of the A500
- 100% compatible with with Fat and Fatter Agnus chips
- User expandable, fully socketed Ram array
- Industry standard low power 256K X 4 DRAM
- Easy "plug-in" installation without soldering
- One year warranty

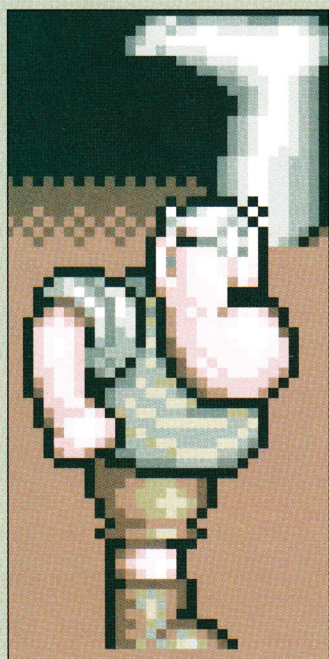


# MONTY PYTHON

## Much too silly

SOME PEOPLE would say that trying to produce a computer game based on a cult TV show is asking for trouble. When that show is Monty Python, it's more like asking for a dead parrot to be stuffed in your ear. Despite this rather unwholesome possibility, Monty Python is indeed the subject of a new game.

The story revolves around Gumby (John Cleese lookalike) and his search for a brain. The search involves traversing a number of levels in which you explode cheeses, collect food (spam, eggs, sausage and beans of course), fend off nasties, and face the ubiquitous



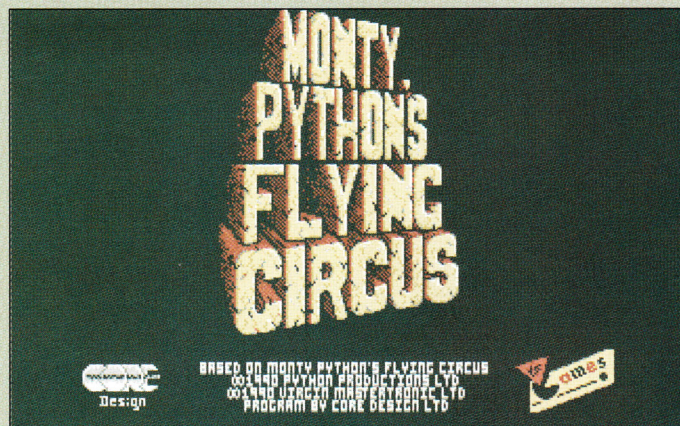
end of level guardian, all armed with a couple of whiffy wet fish.

But don't be fooled. Behind this boringly normal scenario lies a game which will have even confirmed Python haters like me (!) hooked. The game is a great send up of itself and the whole gaming world.

F'rinstance. Have you ever watched an opening sequence where the head of the character you are about to become, opens up and his brain makes a dash for the wide blue yonder? Have you ever played a game where the horrible, awesome, powerful end of level guardian is a Minister of the Church? Have you ever started a game with a score of 99,999,999 and tried to loose as many points as possible, in order to earn a place on the "extremely silly scores" board? Has your dear, sweet Amiga ever farted at you before? Thought not.

From the very first screen you will know that this is no ordinary game. Gumby's progress under falling 16 ton weights is followed closely by what can only be described as a bush on legs. What it was up to I have no idea. But I'm sure it didn't either. After that, things go from zany to zanier.

Most of the time Gumby travels between screens in the usual way. Occasionally, however, he'll find himself in a sort of "preparation" zone, where his head is disengaged from his body (with a satisfying ploink), and attracted to something more suitable - a fish, or a spring for example. Once the operation is



*I'm sorry, this is far too silly. Stop it right now...look, I won't tell you again...*

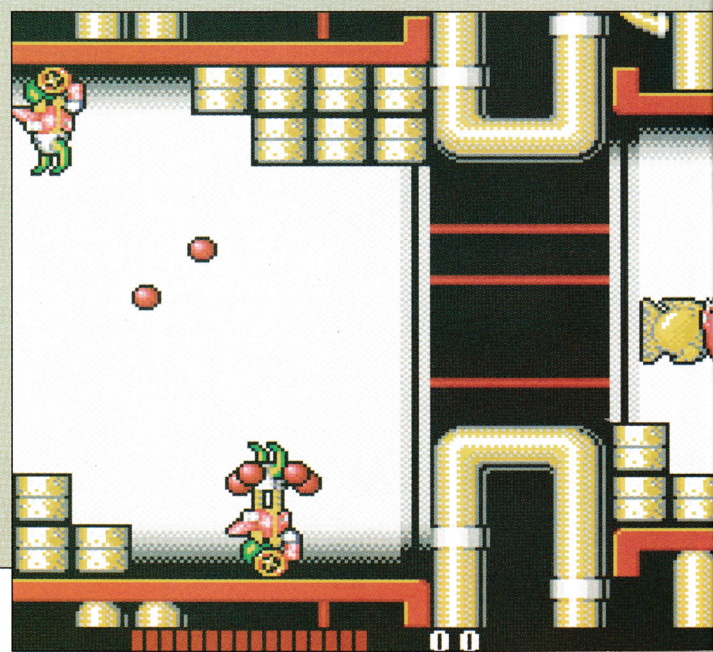
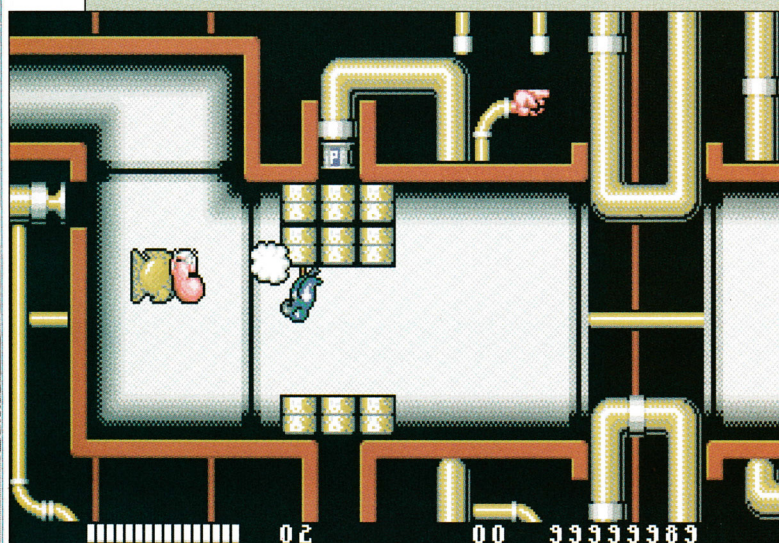


over, a mechanical prodder shoves him off in the right direction.

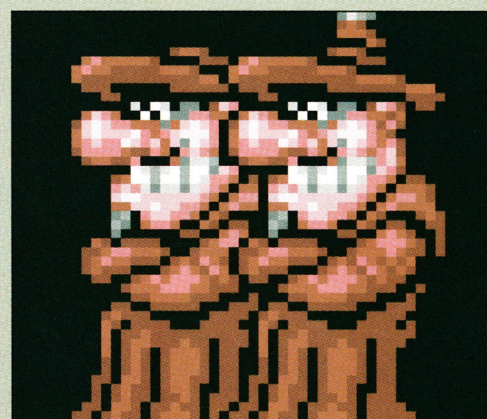
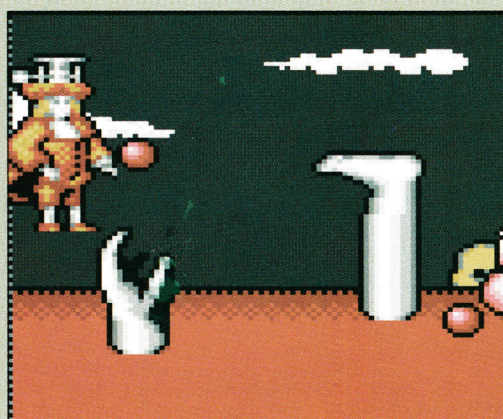
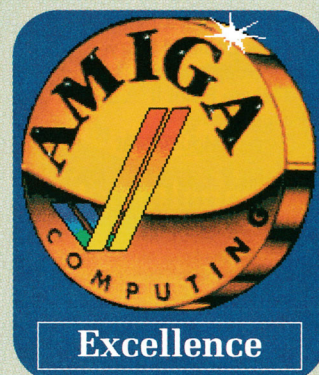
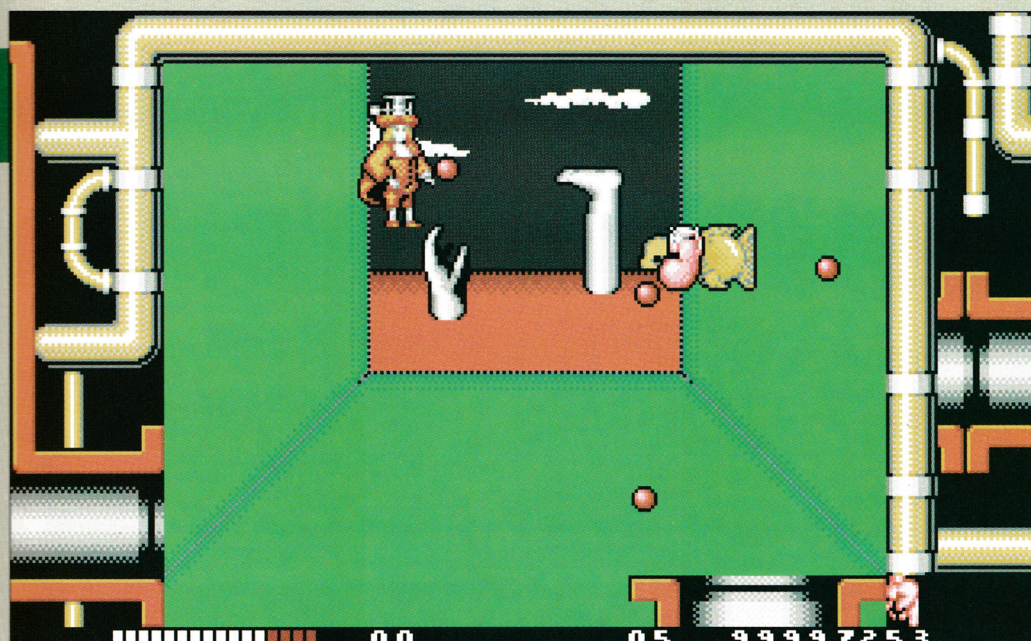
Monty Python is full of the unexpected. Just when you think you have got the hang of things, the screen will go blank and you'll get a "Game over" message. Hang on, I had two lives left! The #@!\$#@ machine's popped its dongle again!

But then a message will appear apologising for the break in your game, and telling you that normal service will be resumed as soon as possible.

Suddenly a flickery black and white breakout clone appears on screen. Another apology and play is resumed. I tell you all of this not







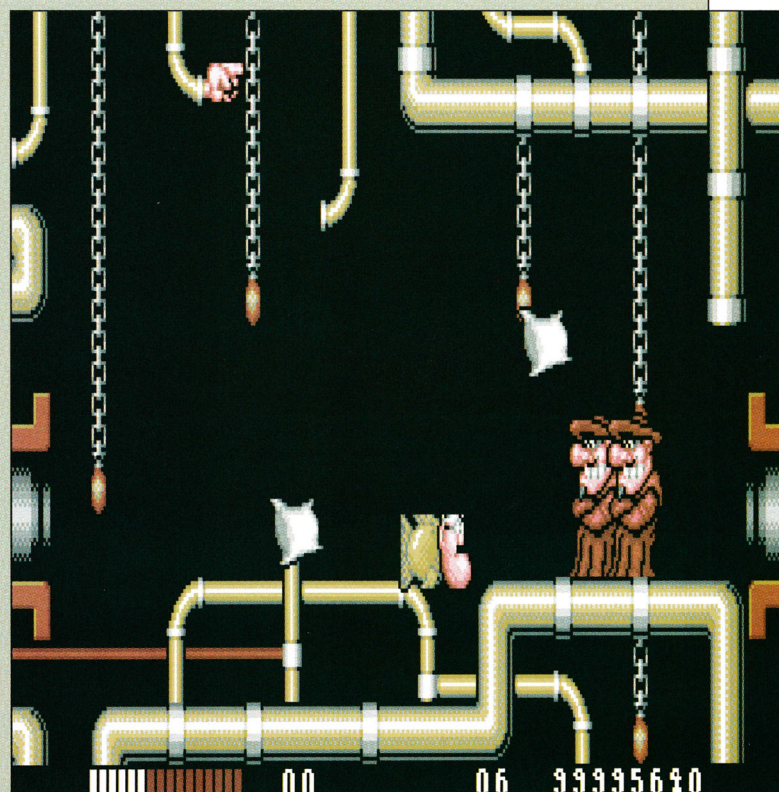
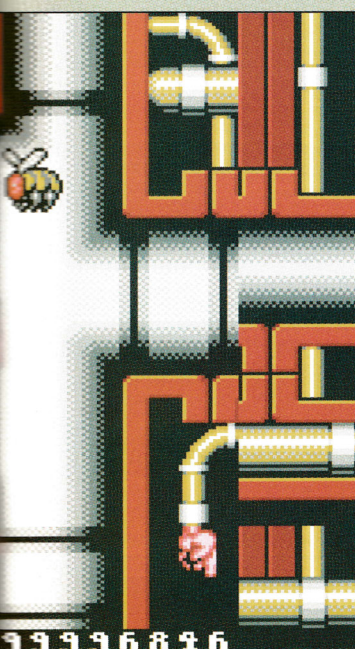
to spoil you fun, because believe me, there are many more things like this awaiting you, but because the first time it happened to me I laughed so much I lost the two lives I had left immediately.

Monty Python is a good piece of entertainment. It's one of the few games where you will actually try

to loose lives just to see the infamous foot descend and crush poor Gumby.

Laughing at yourself is a cathartic experience, and we don't do enough of it in this industry. My only complaint is that the game is a bit on the difficult side. If it were a normal arcade game, I might say it was a bit easy, but trying to concentrate on reaching the end of the level when falling off your chair with laughter is bound to lose a number of lives.

**Mrs GettyGooseGreen**  
**Creature Vogel**



*All together now "I wasn't expecting the Spanish Inquisition...."*

**Monty Python**  
**£24.95**  
**Virgin**

Category	Score (0-10)
Sound	8
Graphics	9
Gameplay	7
Value	9

**Overall – 82%**





# SK MARKETING

## COMPUTER SUPPLIES



### AMIGA HARDWARE

#### AMIGA 500 + FREE SOFTWARE!

- ★ Amiga 500 + TV Modulator
- ★ Batman the Movie
- ★ New Zealand Story
- ★ Interceptor
- ★ Deluxe Paint II
- ★ Dust Cover and Mouse Mat

**ONLY £375 Inc. VAT!**

A590 20MB Hard Drive.....	£374.99
Philips 8833 Monitor.....	£269.95
Commodore 1084S Col. Monitor.....	£259.95
A501 Ram Expansion/Clock.....	£129.95
Video Digitizer.....	£99.95
Cumana 3.5" Drive.....	£94.95
MES Half Meg Ram Expansion.....	£75

#### FLIGHT OF FANTASY

- ★ Amiga 500 + TV Modulator
- ★ Deluxe Paint II
- ★ Escape from Robot Monsters
- ★ F-29 Retaliator
- ★ Rainbow Islands
- ★ Dust Cover & Mouse Mat

**ONLY £385 inc VAT**

AMIGA B2000 .....P.O.A.

### DOT MATRIX PRINTERS

Star LC10 .....	£173
Star LC10 Colour .....	£213
Panasonic KX-P1124 .....	£280
Panasonic KX-P1180 .....	£190

#### CLASS OF THE 90's ONLY £539 Inc. VAT!

#### NEW PHILIPS TV/MONITOR

- ★ MEDIUM Resolution Monitor Input
- ★ Infra-Red Remote Control
- ★ 15" FST Teletext TV
- ★ 60 TV Tuner Presets
- ★ Scart Input/Output connector

**SPECIAL OFFER £279.95**

#### CONTROL CENTRE

Instantly transform your Amiga 500 into an A1000/2000 'look a like' without any modification to the computer. Simply slip the 'control centre' over the Amiga 500 and by reason of its colour match and contour hugging design it becomes an integral part of the computer itself.

- Hides untidy connections at rear of A500
- Holds disk drives, genlocks etc...
- Easy access to joystick ports
- Monitor sits about A500

**£54.95**

### BOOKS

Advanced Amiga BASIC.....	£18.95
Advanced Syst Prog Gde Amiga.....	£32.45
Amiga 3D Graphics Prog BASIC.....	£18.45
Amiga Applications.....	£16.95
Amiga Assembly Lang Prog.....	£14.45
Amiga BASIC Inside & Out.....	£18.95
Amiga C Advanced Programmers.....	£32.45
Amiga C for Beginners.....	£18.45
Amiga DOS Inside & Out.....	£18.45
Amiga DOS.....	£14.95
Amiga DOS Quick Reference.....	£8.95
Amiga DOS Ref Guide.....	£14.95
Amiga Desktop Video.....	£18.45
Amiga Desktop Video Guide.....	£18.45
Amiga Disk Drives Inside & Out.....	£27.95
Amiga For Beginners.....	£12.95
Amiga Gd Graphics Sound Teleco.....	£17.45
Amiga Graphics Inside & Out.....	£32.45
Amiga Hardware Ref Manual Rev.....	£21.95
Amiga Machine Lang Guide.....	£21.95
Amiga Machine Language.....	£18.45
Amiga Microsoft Basic Prog Guide.....	£14.95
Amiga Prog Handbook Vol. 1.....	£24.95
Amiga Prog Handbook Vol. 2.....	£23.95
Amiga Programmers Guide.....	£17.45
Amiga Programmers Guide.....	£20.45
Amiga ROM Kernel Ref Man Autod.....	£28.95
Amiga ROM Kernel Ref Manual.....	£29.95
Amiga ROM Kernel Ref Man Lib.....	£32.95
Amiga System Programmers Guide.....	£32.95
Amiga Tricks and Tips.....	£14.95
Becoming an Amiga Artist.....	£18.45
Beginners Guide to the Amiga.....	£16.95
Compute's 1st Book of Amiga.....	£16.95
Compute's 2nd Book of Amiga.....	£16.95
Elementary Amiga BASIC.....	£14.95
Inside Amiga Graphics.....	£16.95
Inside the Amiga with C 2nd Ed.....	£24.50
Kickstart Guide to the Amiga.....	£13.95
Kids & the Amiga.....	£15.95
Mapping the Amiga.....	£20.95
More Tips & Tricks for Amiga.....	£18.45
Programmers Guide to the Amiga.....	£23.95

### PROFESSIONAL AMIGA SOFTWARE

9 out of 10.....	£29.95
Animator/Images.....	£89.95
Animator.....	£39.95
Animator 3D.....	£99.95
Arena Accounts.....	£149.95
C-Light.....	£39.95
Comic Setter.....	£44.95
Deluxe Paint II.....	£49.95
Deluxe Paint III.....	£64.95
Deluxe Print 2.....	£39.95
Deluxe Music Construction.....	£54.95
Deluxe Productions.....	£99.95
Deluxe Photolab.....	£54.95
Deluxe Video.....	£65.95
Digipaint III.....	£54.95
GFA Basic Compiler.....	£39.95
GFA Basic Interpreter III.....	£39.95
Hisoft Devpac V2.....	£42.95
Hisoft Lattice C.....	£175.95
Home Accounts.....	£22.95
Home Office Kit.....	£104.95
Instant Music.....	£21.95
K-Data.....	£34.95
K-Gadget.....	£19.95
K-Seka.....	£29.95
K-Spread III.....	£75.00
K-Text.....	£14.95
Kind Words V2.....	£33.95
Mailshot Plus.....	£40.95
Music X.....	£169.00
Photon Paint 2.....	£54.95
Prodata.....	£59.95
Protext.....	£64.95
Publishers Choice.....	£74.95
Quartet.....	£39.95
Starter Kit.....	£54.00
Superbase Personal.....	£54.95
Superbase Personal II.....	£65.95
Superplan.....	£69.95
TV Show.....	£59.95
Word Perfect.....	£185.00
Workbench 1.3.....	£15.00
Zetrop (5 in 1 package).....	£79.95

### LEISURE SOFTWARE

688 Attack Sub.....	£16.99
*Action Stations.....	£19.99
*Addas Championship Football.....	£16.99
Amos - Game Creator.....	£35.99
Anarchy.....	£14.99
Answer Back Junior Quiz.....	£15.99
Atomix.....	£13.99
Ant Heads Data Disk.....	£11.99
*A.W.E.S.O.M.E.....	£23.99
Back to the Future II.....	£16.99
Battlemaster.....	£16.99
Battle of Britain (Finest hour).....	£19.99
Battle Squadron.....	£16.99
Battle Chess.....	£16.99
*Battle of Austerlitz.....	£16.99
Black Tiger.....	£16.99
*Betrayal.....	£19.99
Better Spelling (8-Adult).....	£18.95
*Blade Warrior.....	£16.99
Blood Money.....	£16.99
Bloodvych.....	£16.99
Block Out.....	£13.99
Breach 2.....	£16.99
Bridge Player 2150.....	£19.99
BSS Jane Seymour.....	£16.99
*Cadover.....	£16.99
*Carthage.....	£16.99
Castle Master.....	£16.99
Castle Warrior.....	£16.99
Champions of Krynn.....	£19.99
Chase HQ.....	£16.99
Chess Champion 2175.....	£19.99
Codename Iceman.....	£27.99
Conqueror.....	£17.45
Colonels Bequest.....	£27.99
Corporation.....	£16.45
*Cartoon Capers.....	£14.99
*Chrono Quest II.....	£19.99
Cyberball.....	£14.99
Days of Thunder.....	£16.99
Discover Chemistry.....	£13.99
Discover Numbers.....	£13.99
Discover the Alphabet.....	£13.99
Distant Suns.....	£37.99
Dragons Breath.....	£19.99
Dragons of Flame.....	£16.99
Drakhen.....	£19.99

Dungeon Master.....	£16.99
Dungeon Master Editor.....	£8.99
Dynasty Wars.....	£16.99
Dyter 07.....	£13.99
East v West.....	£16.99
Edition 1.....	£19.99
Emlyn Hughes Int. Soccer.....	£16.99
Elite.....	£16.99
E-Motion.....	£16.99
Everton F.C. Intelligensium.....	£14.99
F-16 Combat Pilot.....	£16.99
F-19 Stealth Fighter.....	£19.99
F-29 Retaliator.....	£16.99
Fighter Bomber.....	£19.99
Falcon.....	£19.99
Falcon Mission 1.....	£14.99
Falcon Mission 2.....	£14.99
Flood.....	£16.99
*Final Battle.....	£16.99
Fiendish Freddy.....	£16.99
Fire & Brimstone.....	£16.99
Flimbo's Quest.....	£16.99
Fire Brigade.....	£19.99
French Mistress.....	£15.99
Fun School II (under 6's).....	£13.99
(6 to 8's).....	£13.99
(Over 8's).....	£13.99
Fun School 3 (under 5's).....	£16.45
(5 to 7's).....	£16.45
(Over 7's).....	£16.45
Future Wars.....	£16.99
German Master.....	£15.99
Ghostbusters II.....	£16.99
Gold of the Realm.....	£14.99
Grand National.....	£13.99
Grand Prix Circuit.....	£16.99
Gunship.....	£16.99
Hammerfist.....	£16.99
Hardball 2.....	£16.99
Heroes.....	£19.99
Herewith the Clues.....	£16.99
Heroes Quest.....	£24.99
Harley Davidson.....	£19.99
Hot Rod.....	£16.99
Hound of Shadow.....	£16.99
Honda RVF.....	£17.45
Hypermania.....	£16.99

Imperium.....	£16.99
Impossamole.....	£14.99
Indiana Jones Adventure.....	£16.99
Indiana Jones Action.....	£14.99
Infestation.....	£16.99
International 3D-Tennis.....	£16.99
*Int. Soccer Challenge.....	£16.99
It Came from the Desert.....	£20.99
Ivanhoe.....	£16.99
Jack Nicklaus Golf.....	£16.99
Jack Nicklaus Int. Courses.....	£10.99
Jumping Jackson.....	£13.99
Kick Off.....	£13.99
Kick Off 2.....	£16.99
Khalaan.....	£17.45
Kings Quest Triple Pack.....	£24.99
Kings Quest IV.....	£24.99
Klax.....	£14.99
Knights of Crystallion.....	£19.99
Lost Ninja 2.....	£16.99
Leisure Suit Larry.....	£14.99
Leisure Suit Larry 2.....	£24.99
Leisure Suit Larry 3.....	£27.99
Loom.....	£19.99
*Legend of the Lost.....	£16.99
Lost Patrol.....	£16.99
Lombard RAC Rally.....	£16.99
Magic Maths (4-8yrs).....	£18.99
Manhunter.....	£19.99
Manhunter 2.....	£19.99
Manchester United.....	£16.99
Maniac Mansion.....	£16.99
Maths Mania (8-12yrs).....	£18.99
Matrix Marauders.....	£14.99
Mega Maths.....	£19.99
Midnight Resistance.....	£16.99
Midwinter.....	£19.99
Might & Magic 2.....	£19.99
*Murder.....	£19.99
*Necronom.....	£16.99
Newcomer.....	£19.99
New Zealand Story.....	£16.99
New York Warriors.....	£19.99
Ninja Spirits.....	£16.99
Ninja Warriors.....	£16.99
Nuclear RVF.....	£17.45
Operation Stealth.....	£16.99

Overrun.....	£20.90
*Oriental Games.....	£16.99
Pipemania.....	£16.45
Pirates.....	£16.99
Photon Storm.....	£13.99
Player Manager.....	£13.99
Police Quest.....	£17.45
Police Quest 2.....	£24.95
Pools of Radiance.....	£20.90
Populous.....	£16.99
Populous Data Disk.....	£9.99
Primary Maths Course.....	£19.99
Precious Metal.....	£16.99
Projectyle.....	£16.99
Pro Tennis Tour.....	£16.99
Puzzle Book.....	£13.99
Pyramix.....	£13.99
Rainbow Islands.....	£16.99
Red Storm Rising.....	£16.99
Resolution 101.....	£17.45
Rick Dangerous.....	£16.45
*Rick Dangerous II.....	£16.99
Rings of Medusa.....	£17.99
Rorkes Drift.....	£16.99
Rotox.....	£16.99
Second Front.....	£20.90
Shadow of the Beast.....	£16.45
Shadow of the Beast II.....	£23.99
Shockwave.....	£16.99
Silkworm.....	£14.99
Shadow Warriors.....	£16.99
Sherman M4.....	£17.45
Sim City.....	£19.99
Sim City Terrain Editor.....	£11.95
Skid 2.....	£14.99
*Sly Spy.....	£16.99
*Snowstrike.....	£19.99
Space Ace.....	£32.95
Space Quest 1.....	£17.45
Space Quest 2.....	£17.45
Space Quest 3.....	£24.99
Space Rogue.....	£19.99
Spell Book (4-9 yrs).....	£13.99
Star Wars Trilogy.....	£20.95
*Street Hockey.....	£16.99
Stunt Car Racer.....	£16.99
Sword of Aragon.....	£19.99

Sword of Twilight.....	£19.99
*Starblade.....	£16.99
Storm Lord.....	£13.99
Teenage Mutant Turtles.....	£24.95
Tennis Cup.....	£16.99
Test Drive 2.....	£16.99
Test Drive Euro Challenge.....	£11.99
*The Killing Game Show.....	£16.99
The Punisher.....	£16.99
*The Spy Who Loved Me.....	£16.99
*The Ultimate Ride.....	£16.99
Theme Park Mystery.....	£16.99
Third Courier.....	£16.99
Thrill Time Platinum II.....	£19.99
Thunderstrike.....	£16.99
Tie Break.....	£16.99
Turrican.....	£13.99
Tusker.....	£16.99
The Plague.....	£16.99
TV Sports Football.....	£19.99
TV Sports Basketball.....	£19.99
Time Soldier.....	£16.45
Toobin.....	£14.99
Treasure Trap.....	£16.99
Triad III.....	£19.99
*Ultima V.....	£19.99
*UMS 2.....	£19.99
Unreal.....	£19.99
Untouchables.....	£16.99
Ultimate Golf.....	£16.99
*Universe 3.....	£16.99
Venus Fly Trap.....	£13.99
War Head.....	£16.99
*War Jeep.....	£16.99
Wayne Gretzky Hockey.....	£19.99
*White Death.....	£19.99
Wild Streets.....	£16.99
Xenomorph.....	£16.99
Xenon II Megablast.....	£16.99
Xenophobe.....	£16.99
X-OUT.....	£14.99
Web of Terror.....	£13.99
Zombi.....	£16.99

### LATEST RELEASES

Better Spelling (8-Adult).....	£19.95
*Blade Warrior.....	£15.90
Block Out.....	£13.90
*Bomber.....	£21.90
*Breach 2.....	£17.45
*Budokhan.....	£17.45
*Cartoon Capers.....	£14.90
*Chrono Quest II.....	£19.90
Codename Iceman.....	£27.99
Colonel's Bequest.....	£27.99
Combo Racer.....	£17.45
Conquest of Camelot.....	£27.99
Discover Chemistry.....	£13.90
Discover Numbers.....	£13.90
Discover Maths.....	£13.90
Discover the Alphabet.....	£13.90
East v West.....	£16.99
Flimbo's Quest.....	£17.45
Heroes.....	£21.95
Khalaan.....	£16.99
*Kid Gloves.....	£15.90
Magic Maths (4-8 yrs).....	£19.95
Maths Mania (8-12 yrs).....	£19.95
*Matrix Marauders.....	£15.90
Might & Magic.....	£21.95
Neuromancer.....	£17.45
Photon Storm.....	£13.90
Pirates.....	£17.45
Punisher.....	£16.99
Puzzle Book.....	£13.90
Pyramax.....	£13.90
*Sonic Boom.....	£17.45
Spell Book (4-9 yrs).....	£13.90
*Starblade.....	£17.45
Storm Lord.....	£13.90
*The Killing Game Show.....	£15.90
The Plague.....	£16.99
Turrican.....	£13.90
Tusker.....	£17.45
Unreal.....	£19.99

24 hour hotline for credit card orders



All prices subject to change without notice

All goods subject to availability. Titles marked \* may not be released and will be sent on the day of release (subject to availability).

## SALES HOTLINE

**0923 89 69 69/071 381 6618**

To order: Please send cheque/PO/Access or Visa details to SK Marketing Ltd, 13 Moneyhill Parade, Uxbridge Road, Rickmansworth, Herts, WD3 2BE.

All prices include VAT and carriage is free (UK mainland)

**South London:**  
10 Fulham Broadway  
London SW6 1AA  
Tel: 071 381 6618  
Fax: 071 381 0528

**North London:**  
13 Moneyhill Parade  
Uxbridge Road  
Rickmansworth  
Herts WD3 2BE  
Tel: 0923 896969  
Fax: 0923 771058

PERSONAL CALLERS WELCOME AT BOTH SHOWROOMS





## Andrew Banner

*The map allows you to view the forthcoming locations – next stop, the forest*

*All your grocery needs can be catered for in this handy corner shop – you can buy big weapons, too*

*Brian's quest takes him across many hostile lands, his path being fraught with danger and strange insects*

**Prophecy 1 - The Viking Child**  
£24.99  
**Electronic Zoo**

Category	Score (0-10)
Graphics	9
Sound	8
Gameplay	9
Value	9

**Overall – 85%**



# B.S.S. JANE SEYMOUR

## Toiletries in space

**A**WOKE to the quiet bleeping of the life monitor computers attached to my body. Either that was that one hell of a party or a huge asteroid belt. No bottles, must have been the asteroids. The headache subsided and I could remember abandoning ship in the emergency escape vessel. Could even remember pulling back into the Earth's orbit. Getting up and yanking the tubes and probes from my skin, an electronic voice announced that there was a state of emergency.

Gone was the sweet view of the Earth, to be replaced by a mass of 20 huge green Federation ships of the Regal Fleet. An SOS message bellowed though the corridors from the commander of the flagship, the biological survey ship, B.S.S. Jane Seymour. The commander began to tell of the plight of the fleet, how all 20 craft had been smothered with radiation from a Wolf-Raert Star going nova. "All systems are failing, and the only option appears to be to join the other crew members in the Cyrogenics." Apparently the ship's alive with alien creatures that have escaped from quarantine and are dangerous. The message was dated 8th July 2190, it's now 6th October 2195, and the Commander said that there was only enough power to sustain life for just 15 months.

After a conversation with the on-board computer I had no choice but to board the Jane Seymour and

to risk my life to return to Earth. My own ship had not enough fuel to reach home and the only ship in this looming fleet that did was the last one. Unfortunately, because Federation bureaucracy is so stupid, boarding each ship is only possible in strict hierarchical order.

Apparently there are also a goodly amount of crew left on these ships but due to the level of radiation and lack of power for the life support, mutation forms are about 95 percent over the odds.

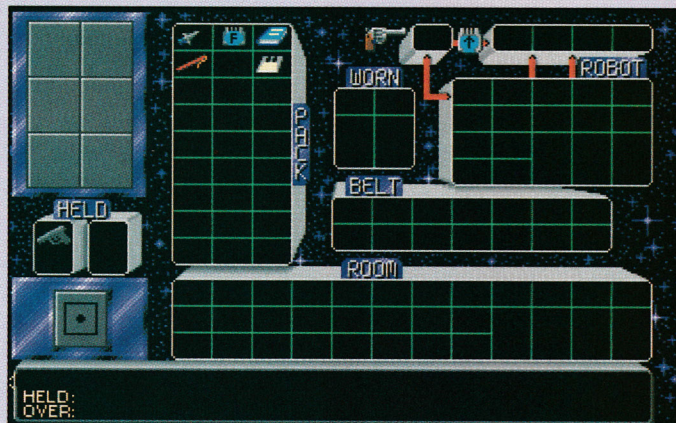
And so my quest was laid before me, I had to board each ship in turn to get home. The ships are all malfunctioning and I also have to return each to at least 80 percent working order so that I may board the next.

The B.S.S. Jane Seymour is a clean ship. All corridors and paneling is very clean and sparkling, but there are a good few items littering the desks, many of which prove to be very useful. Strange though, I can't seem to turn around much and my movement is limited to straight ahead, back, left and right using some kind of side-stepping motion – it really feels inhibitive not being able to rotate. Also I don't seem to walk down the corridors, I just seem to jump from one place to another without seeing what went in between. Weird!

What the heck? Ugh! It just kissed me, huge, horrible red lips!



Face to face with a marauding alien – shoot it!



Your inventory screen, detailing what you've collected

Oh, I feel dizzy. Better use that medical syringe to heal my wounds, after I've burnt the thing with this flame thrower. Right now, where's that energy flux decoupler and inhibit lock to get this ship moving?

Must be quick now and find a suit, the life support systems are failing fast. Oh, a robot, wonder if it works? Great, fully functional, right carry this and come with me.

You have been reading an extract from my travel log, Chapter 354 on board the B.S.S. Jane Seymour. It took a good few hours to get this beast working but once I had got the hang of the controls and knew what I was up to, it became much easier. One thing's certain, it's a whole lot better than Federation of Free Traders.

Andrew Banner



Useful objects are scattered all around – as a rule, pick up everything you find

<b>B.S.S. Jane Seymour</b>	
<b>£25.95</b>	
<b>Gremlin</b>	
Sound	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Graphics	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Gameplay	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Value	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
<b>Overall – 78%</b>	





# VIDEO FRAME GRABBER

**PAL VERSION**  
**£114.95**  
**INC VAT**

VIDI-AMIGA SCREEN SHOT



*AVAILABLE  
FROM ALL GOOD  
COMPUTER SHOPS*



## VIDI FEATURES ...

- Take snapshots in 16 shades live from video.
- Multiple frame store (will utilise all available memory).
- Dynamic cut and paste.
- Full palette control.
- Hardware and software control of brightness and contrast.
- Compatible with all video standards (colour, black and white, VHS, Beta, PAL, NTSC etc.)
- Upgradable to full colour with additional 'VIDICHROME' pack.

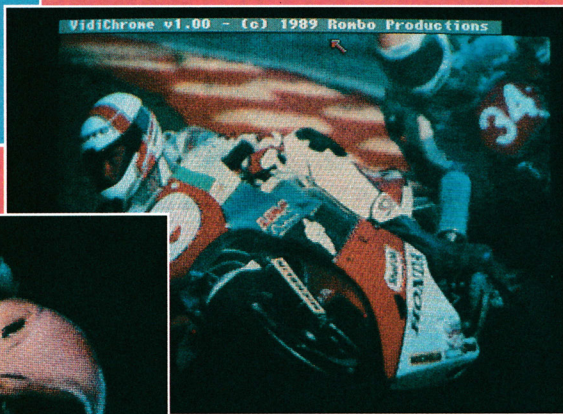
**COLOUR UPGRADE**  
**£19.95 inc VAT**

## VIDI ENABLES YOU TO ...

- Have perfect freeze frame from any video.
- Incorporate real life objects into your favourite design.
- Grab real time 3-D images from TV.
- Enhance your graphics creativity.
- Capture and store action sequences.
- Desk top video.
- D.T.P. (Desk Top Publishing).



VIDI-AMIGA SCREEN SHOT



VIDI-AMIGA SCREEN SHOT

**VIDI-  
AMIGA**

**Rombo Ltd., 6 Fairbairn Road, Kirkton North,  
Livingston, Scotland EH54 6TS.**

**TEL: 0506-414631**  
**FAX: 0506-414634**

**Rombo  
Limited**



### QUALITY GUARANTEE

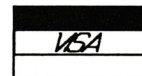
All our products carry our full  
replacement no quibble  
guarantee  
**REMEMBER !!!**  
We only supply Quality  
Beware of cheap imitations

# MEDIA DIRECT

TELESALES HOTLINES  
**0782 208228**

Cheques and PO's to:-  
Media Direct Dept AMC  
Unit 19 The Business Park  
Bedford Street, Shelton  
Stoke-on-Trent, ST1 4PZ

All Prices inc VAT  
Please add £2.95 P&P per Order  
Next Day delivery £10.00  
U.K. ORDERS ONLY



### STACKABLE STORAGE BOXES

#### BANX BOX

holds 90 3.5" disks  
can be stacked horizontally  
and vertically  
1 off.....£9.00 each  
3+.....£8.50 each  
5+.....£8.00 each

#### THE AMAZING POSSO BOX

holds 150 3.5" disks & can be  
stacked horizontally or  
vertically  
only £15.95

### DISK STORAGE BOXES

3.5" 100 CAPACITY.....£5.50  
3.5" 50 CAPACITY.....£5.00  
5.25" 100 CAPACITY.....£5.50  
All the above have lock & dividers  
3.5" 10 CAPACITY.....£0.95  
or 10 for.....£7.50

## AMAZING OFFERS ON 3.5" DSDD DISKS

25 DSDD 135 tpi.....£10.95  
50 DSDD 135 tpi.....£20.95  
75 DSDD 135 tpi.....£30.95  
100 DSDD 135 tpi.....£39.95

### SPECIAL OFFER

200 DSDD DISKS &  
2 X 100 CAP. BOXES      **£81.95**

AMIGA 512K (0.5 meg.)  
RAM EXPANSION  
only **£35.00**  
(including battery backed  
clock & disable switch)

KICKSTART CARD.....£19.95  
VIRUS PROTECTOR...£19.95  
BOOT SELECTOR.....£14.95

DATL ACTION REPLAY  
(The ultimate cartridge)  
only **£57.95**

### DISK DRIVES

AMIGA 3.5" EXTERNAL DRIVE  
Slimline and very quiet  
only **£59.95**  
ATARI 3.5" EXTERNAL DRIVE  
Slimline and very quiet  
(Requires no external power supply)  
only **£59.95**

## FOR BULK BUYERS 3.5" DSDD 135tpi DISKS

500.....£187.50  
750.....£269.95  
1000.....£330.00

### £1:00 off

**\*\* Standard 50 or 100 capacity boxes when  
purchased with disks      \*\***

### LIMITED OFFER ONLY BRANDED DISKS SONY or VERBATIM

100 3.5" DSDD  
only **£69.95**  
100 5.25" DSDD  
only **£59.95**

### 3.5" HIGH DENSITY DISKS

All disks 100% cert. & error free  
10.....£9.95  
25.....£24.45  
50.....£47.50  
75.....£69.75  
100.....£89.95  
inc. Labels

### 5.25" DSDD DISKS

All disks 100% cert. & error free  
50.....£12.95  
100.....£23.95  
150.....£35.25  
200.....£45.95  
Labels & Envelopes supplied

### 5.25" DSHD DISKS

All disks 100% cert. & error free  
50.....£22.45  
100.....£43.95  
150.....£62.95  
200.....£79.95  
Labels & Envelopes supplied

### SONY BULK 3.5" DSDD

25.....£13.25  
50.....£24.45  
75.....£36.95  
100.....£46.95  
200.....£89.95  
500.....£199.95  
1000.....£369.95

### RAINBOW PACK DISKS (Red, Green, Blue, Yellow, Orange & White)

3.5" DSDD (100% error free)  
25 DSDD 135tpi.....£15.45  
50 DSDD 135tpi.....£29.45  
75 DSDD 135 tpi.....£42.95  
100 DSDD 135 tpi.....£55.95  
5.25 DSDD (100% error free)

25 DSDD.....£10.45  
50 DSDD.....£18.95  
75 DSDD.....£27.95  
100 DSDD.....£34.95

COLOURS AND QUANTITIES  
OF YOUR CHOICE

### GENERAL ACCESSORIES

QUALITY MOUSE MATS.....£2.50  
MOUSE POCKETS.....£1.50  
3.5" CLEANING KIT.....£1.80  
5.25" CLEANING KIT.....£1.80  
AMIGA DUST COVER.....£3.95  
ATARI DUST COVER.....£3.95  
2 PIECE PRINTER STAND.....£6.95  
LABELS per 1000.....£9.95  
TILT AND TURN MONITOR STAND  
£12.95

### JOYSTICKS

PRO 5000.....£12.95  
NAVIGATOR.....£12.95  
KONIX SPEEDSTICK.....£9.95

### RIBBONS

STAR LC10 MONO.....£3.50  
STAR LC10 COLOUR.....£6.95

### AMIGA PUBLIC DOMAIN

UTILITIES, GRAPHICS & MUSIC  
GRAPHIC & MUSIC DEMOS

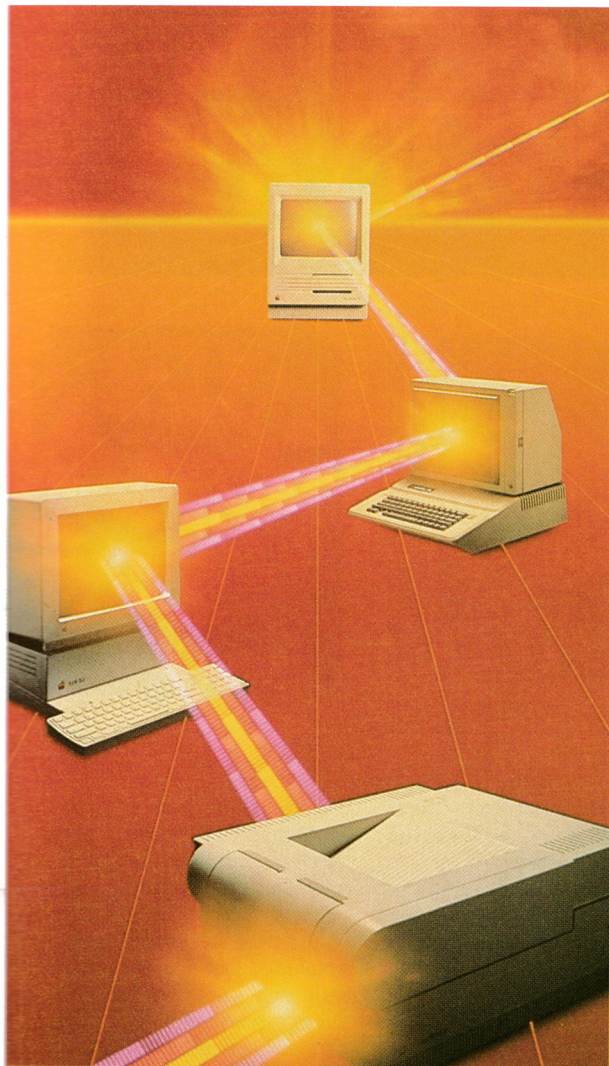
100's of disks from £1.20 per disk  
10 Public Domain disks in storage  
box **£9.95**

SEND FOR FREE CATALOGUE  
P.D. disks are inclusive of p&p

### SWITCHES AND CABLES

2 WAY DATA SWITCHES:-  
SERIAL.....£12.95  
PARALLEL.....£12.95  
PAR. PRN CABLES...£7.95





# 'TODAY'S WAY'

TO GET  
*in touch*

MicroLink is your vital link with other users the world over. Exchange news and views via a Bulletin Board or pit your wits against fellow players of MicroLink's challenging multi-user games, including BLOODSTONE and FEDERATION II.



## WHAT'S GOING ON OUT THERE?

VIEWTEL lets you see at a glance what's happening – as it happens – in the world of finance, current affairs, sport and leisure.



## STEAL MICHAEL FISH'S THUNDER!

WEATHERLINK lets you display satellite weather maps of the U.K. and Europe on your own monitor.



## 'SAY IT' WITH FLORALINK

Make someone's day extra special with flowers and your message delivered direct via MicroLink's FLORALINK facility.



## HOW'S BUSINESS FOR 280,000 TOP U.K. COMPANIES?

INFOCHECK gives you the current status and credit recommendations on over 280,000 leading companies in Britain.

# MicroLink

## WE'VE TAKEN INTO ACCOUNT ALL BRITAIN'S BIGGEST BUSINESSES

The facts about 2.1m U.K. companies and full audited accounts for companies with £1m+ turnover via JORDAN INFORMATION

## HOT NEWS FROM MICROLINK

Instant access to early edition newspapers plus many U.K. and U.S. magazines, journals and research reports through PROFILE INFORMATION.



## WHAT'S THE QUICKEST WAY TO JFK?

Key into the OFFICIAL AIRLINE GUIDES (OAG) for full flight, fare and seat availability details of 100's of airlines.

## YOU'VE GOT 'FRIENDS IN THE TRADE' ALL OVER THE WORLD

BUSINESSLINK is MicroLink's bulletin board where you can pose problems, queries and requests to like-minded professionals throughout the world.

And these are just a few of over 1200 varied business databases available through MICROLINK covering Market Information and Research Reports to Technical, Medical and Scientific Data.

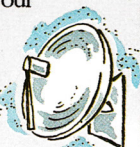
# THE BUSINESS BRAIN THAT'S YOUNG AT HEART

BE ABLE TO ACCESS ALL THIS FROM JUST £7.00 A MONTH

*With a home or office micro, modem and communications software, you can use MICROLINK to access business information worldwide, communicate on a global scale, even organise your social calendar and much, much more. All from as little as £7.00 a month. Mail the coupon below to find out more.*

## MICROLINK TURNS ANY PERSONAL COMPUTER INTO A COMPLETE COMMUNICATIONS CENTRE

Make the most of your computer with MicroLink's total communications package which includes Electronic Mail, Fax, Telex, Telemessages, Telegrams and RadioPaging.



I would like to know more about MicroLink. Please send me the complete MicroLink Information Pack.

Name .....

Address .....

Postcode ..... Tel No .....

**MicroLink**

*The Vital Link*

MICROLINK, 4 MOONS PARK,  
BURNT MEADOW ROAD, REDDITCH,  
WORCESTERSHIRE B98 9PA.  
TEL: 0527 69459 (Sales & Marketing)  
FAX: 0527 63084



# OPERATION STEALTH

Tread softly, trust no one

**M**y name is Glames, John Glames CIA Field Operative extraordinaire. Let me tell you about my last mission:

Operation Stealth. The stealth fighter is the latest radar invisible-war plane – the pride of the U.S. Airforce, at least it was until person or persons unknown thieved it from under their very noses.

Of course it was a bit difficult to trace on account of the radar invisibility. So that was my mission – bring it back or kiss goodbye to a promising career.

Professor Carling provided me with lots of hi-tech toys: False attache case, exploding cigarettes, safe cracking devices – the sort of things that no self-respecting secret agent should leave the house without.

As usual I didn't have much to go on but on arrival at Santa Paragua Airport a quick trip to the toilet soon solved that problem.

Did I mention the Paraguay connection? One of our agents in Santa Paragua sent a telegram asking for help with the Stealth affair. I suspected that General Manigua, probably in cahoots with the commies as well.

So from the airport I caught a taxi downtown into a world of subterfuge darker than the dark side of the moon on a very dark night.

Thus in Operation Stealth you assume the role of CIA Agent John Glames. This is done by means of Delphine Software's widely acclaimed Cinematique system, first seen in Future Wars. Everything can be controlled by moving the mouse pointer around the screen and selecting actions or objects from pulldown menus.

This system was criticised in Future Wars for being a little difficult to use: Some vital objects were so small that it was a matter of chance whether careful sweeps of the screen with the pointer would bring them to light or not. The positioning and size of objects improved upon in Operation Stealth. This doesn't mean it's easy though – you still have to work out what to do with an object once you've found it!

The weak point of the Cinematique System is persuading Mr Glames to walk where you want him to. It's easy to confuse him into missing a door and even after

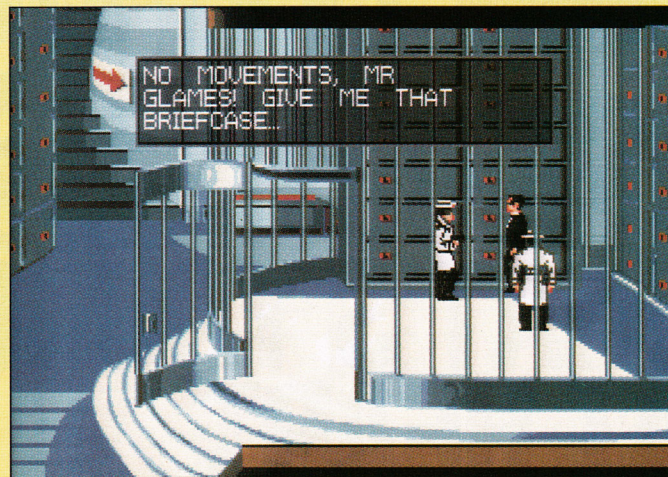


Glames arrives at the airport, only to be caught nicking luggage!

quite a lot of practice a slightly misplaced pointer can send him onto another screen which means an irritating pause for disk consultation.

Like all adventures Operation Stealth is heavily dependent on

clearly presented text, and it seems that Monsieur Delphine Software is not entirely *au fait* with the finer points of the Queen's English. Getting someone from this side of the Channel to proof read the game would surely



Ooh, double dealing. The guy shot in the park makes an unwelcome return



John makes the mistake of swimming in concrete wellies!



have got rid of some of the more gross grammatical gaffs. A number of embarrassing unamusing messages spoils the overall atmosphere of the game too.

But these are small points. The graphics, although done in a comic strip style, are a clear and colourful representation of John Glames' three dimensional world, and must fill a large part of the three disks that comprise the Operation Stealth Package.

The sound, although not continuous, is excellent. Footsteps step and doors click perfectly. Secret agent gadgets make authentic secret agent gadget noises, adding atmosphere to the proceedings.

All in all Operation Stealth is a pretty damn good adventure game.

The depths of depression and frustration when you can't solve a puzzle are surpassed by the raptures of joy when you finally untangle it. I wouldn't regret mugging my piggybank to buy the game and it has been interesting enough to keep me awake into the early hours of the morning on several occasions.

And you can't say fairer than that.

Frankie Passed Thru Cricklewood

**Operation Stealth**  
£24.95  
US Gold

Sound	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Graphics	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Gameplay	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Value	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>

**Overall – 83%**



# Special Reserve

BRUTAL PRICES!  
WHY NOT JOIN?



**NRG** (Energy magazine) News, Reviews and Graphics. Screen shots, pack shots, charts, latest Giga-Savers. 40 colour reviews in every issue. Night City Cyberbution and the kill-or-die adventures of the Cyberpunk **NRG** street gang - It's Cyber-fantastic! **NRG** - bi-monthly to all Special Reserve members. **Release Schedules**, sent bi-monthly, and updated catalogue information. **Sales hotline**, to 8pm weekdays and 5-30pm Saturdays. **Fast despatch** of stock items **individually wrapped by first class post**. **Written confirmations** (and receipts) sent when we receive each order. **Catalogue, Membership Card & Folder for NRG**. **Refunds** or change of order on request if delayed. **No Obligation** to buy. Over **30,000** have joined!

**£6.00**

## Amiga Software

888 ATTACK SUB	16.99	GREG NORMAN'S GOLF	17.99	PROPHET - VIKING CHILD	16.49
ACCOLADE IN ACTION	19.99	GUNSHIP	16.99	PROTEXT WP	64.99
ADIDAS CHAMP FOOTBALL	16.49	HARD BALL 2	16.99	PUBLISHERS CHOICE	
ALPHA WAVES	15.99	HARLEY DAVIDSON	17.99	DTP (1 MEG)	59.99
AMOS (GAMES CREATOR)	29.99	HEROES	19.99	QUEST FOR GLORY (1 MEG)	22.99
AMOS SPRITES 1000	10.99	HITCH HIKERS GUIDE	7.99	RAINBOW ISLAND	16.49
ANARCHY	13.99	HOLLYWOOD HUNX	17.49	RAMROD	17.49
ARMOUR GEDDON	16.49	HOME OFFICE KIT	86.99	RED STORM RISING	16.99
BATTLECHESS	16.49	HOUND DOGBONES	16.49	PICK DANGEROUS 2	16.49
B.S.S. JANE SEYMOUR	17.99	IMMORTAL	16.99	RISK	13.49
BACK TO THE FUTURE 2	16.49	IMPERIUM	16.99	ROBOCOP	15.99
BACKGAMMON PRO	14.99	INDIANAPOLIS 500	16.49	ROBOCOP 2	15.99
BALANCE OF POWER 1990	15.99	INFATIGABLE	16.49	ROCKSTAR'S DRIFT	16.49
BARDS TALE 1	8.99	INTERNATIONAL 3D TENNIS	16.99	ROTOX	17.49
BARDS TALE 2	8.99	INT. SOCCER CHALLENGE	16.49	SCAPEGHOST (LEVEL 9)	12.99
BATTLE OF BRITAIN	19.99	ISHIDO	19.99	SCRABBLE DE LUXE	13.49
BATTLESHIP	17.99	IT CAME FROM THE DESERT	16.49	SECRET AGENT SLY SPY	16.49
BEAST 2	21.99	DATA DISK (1 MEG)	10.99	SHADOW WARRIORS	16.49
BETRAYAL	19.99	ITALY 1990 (US GOLD)	14.99	SHERMAN M4	17.49
BOMBARD ZORK (INFOCOM)	24.99	IVAN STEWARTS SUPER	16.49	SHOCKWAVE	16.99
BLADE WARRIOR	16.49	J. NICKLAUS GOLF	16.99	SHOGUN (INFOCOM)	18.99
BLITZKRIEG - MAY 1940	15.99	J. NICKLAUS VOL 1 COURSES	9.99	SIM CITY TERRAIN EDITOR	9.99
BLOODWYCH DATA DISK	10.49	J. NICKLAUS VOL 2	9.99	SIMULCRA	16.99
BOMBER	18.99	LOT COURSES	9.99	SPACE ACE	27.99
BOMBER MISSION DISK	11.49	JUDGE DREDD	13.99	SPACE QUEST 1 (SIERRA)	16.99
BREACH 2 (1 MEG)	15.99	KHALAAN	15.99	SPACE QUEST 2 (SIERRA)	16.99
BRIDGE PLAYER 2150	19.99	KICK OFF 2	12.99	SPACE QUEST 3 (SIERRA)	22.99
BROOKAN	16.99	KICK OFF EXPANSION DISK	7.99	SPACE ROGUE	17.99
CADAVER	16.49	KILLING GAME SHOW	16.99	SPELLBOUND	13.49
CAPTIVE	15.99	KIND WORDS 2.0 (WP)	31.99	SPY WHO LOVED ME	16.49
CARTHAGE	16.49	KINGS QUEST 1, 2 & 3	22.99	STARBLADE	16.99
CHAMPIONS OF KRYNN (1 MEG)	19.99	KINGS QUEST 4 (1 MEG)	19.99	STARFLIGHT	16.99
CHASE H.Q.	16.49	KLAX	13.49	STEVE DAVIS SNOOKER	12.99
CHUCK CHAMPION 2175	19.99	KNIGHTS OF CRYSTALLON	20.99	STORM ACROSS EUROPE	20.99
CHUCK YEAGER'S AFT 2.0	16.99	LEADERBOARD BIRDIE	17.99	STRYX	13.49
CHUCKLE	24.99	LEATHER GADGETS	16.49	SWINDERS STRIKE	16.49
COLONEL'S BEQUEST (1 MEG)	24.99	LEGEND OF FAERGHIL	7.99	TIE BREAK	16.49
COLORADO	16.49	LEISURE SUIT LARRY 1	19.49	TIME MACHINE	16.99
COLLOSSUS X CHESS	15.99	LEISURE SUIT LARRY 3	24.99	TREASURE TRAP	15.99
CONQUEROR	15.49	LOT COURSES	20.99	TRIAD VOL 3	19.99
CONQ. OF CAMELOT (1 MEG)	24.99	LOTUS ESPRIT TURBO	16.49	TRIP A TRON	17.99
CORPORATION	15.99	CHALLENGE	17.49	TURN IT (SHANGHAI VARIANT)	13.99
DAMOCLES	15.49	MAGIC FLY	16.99	TURRICAN	12.99
DAYS OF THUNDER	15.99	MATRIARCHAUSERS	12.49	UNDEAD	16.49
DELUXE MUSIC CONST. SET	49.99	MAVIS BEACON TEACHES TYPING	16.49	ULTIMATE RIDE	15.99
DELUXE PAINT 3	49.99	MIDNIGHT RESISTANCE	16.49	UMS CIVIL WAR DISK	9.99
DELUXE VIDEO 3	62.99	MIDWINTER	19.99	UMS VIETNAM DISK	9.99
DOUBLE DRAGON 2	13.99	MIDWINTER MAGIC 2	20.99	UNIVERSAL MILITARY SIM. 2	19.99
DRAGON WARS	16.49	MONTY PYTHON'S FLYING CIRC.	13.99	VAXINE	17.49
DRAGON'S LAIR (1 MEG)	28.49	MURDER	17.99	VENUS - THE FLY TRAP	14.49
DRAGONFLIGHT	16.49	MURDER IN SPACE	15.99	VETTE (CORVETTE)	18.99
DUNGEON MASTER EDITOR	8.99	NETIMIA	17.49	WAR JEEP	16.99
EAST VS. WEST	15.99	NEUROMANCER	15.99	WARHEAD	16.99
ELVIRA	19.99	NEW YORK WARRIORS	13.99	WELLTRIS	15.49
ENCHANTER (INFOCOM)	18.99	NIGHTBREED	16.49	WHEELS OF FIRE	19.99
ESCAPE FROM THE PLANET	28.99	COPS UP	16.99	WINGS (1 MEG)	16.49
OF THE ROBOT MONSTERS	13.49	OPERATION SPRUANCE	16.99	WINGS OF FURY	16.49
EUROPEAN SUPER LEAGUE	15.99	OPERATION STEALTH	17.49	WIPE OUT	12.99
EXTACT	13.99	OPERATION THERMOLIT	16.49	WINDRINGER (INFOCOM)	11.99
F16 FALCON MISSION DISK 2	12.99	OPERATION WOLF	16.49	WORKBENCH 1.3	13.99
F19 STEALTH FIGHTER	19.99	PARADROID 90	16.49	WORLD BOXING MANAGER	13.49
F29 RETALIATOR	16.49	PHOTON PAINT 2.0 (1 MEG)	49.99	WORLD CUP - ITALY 90	12.99
FERRARI FORMULA 1	8.99	PIRATES	16.99	WORLD CUP - ITALY 90 (1 MEG)	13.49
FIRE AND BRIMSTONE	16.99	PLAGUE	16.99	X-OUT	12.99
FLIGHT SIMULATOR 2	22.99	PLANETFALL (INFOCOM)	7.99	XENOMORPH	15.99
FUTURE CLASSICS	16.49	PLAYMAN MANAGER	16.49	XIPHOS	15.99
FUTURE WARS	17.99	PLOTTING	16.99		
GAUNTLET 2	8.99	PLANET QUEST 1 (SIERRA)	16.49		
GHOLDS 'N' GHOSTS	17.99	PLANET QUEST 2 (1 MEG)	22.99		
GO PLAYER PRO	19.99	POLICE PROMISED LANDS	16.49		
		POWERDROME	8.99		
		POWERMONGER	18.99		
		PROJECTYLE	16.49		

IF THE GAME YOU ARE LOOKING FOR IS NOT IN THIS LIST PLEASE CHECK THE MEGA-SAVERS BELOW. PHONE US ON THE SALES LINE FOR A WIDER SELECTION.

## Amiga Mega-Savers

KICK OFF	6.99	3D POOL	8.49	KRISTAL	10.49
XENON	7.99	ALTERED BEAST	7.49	KULT	6.99
POWERDRIFT	5.99	ARCHIPALAGOS	6.99	LANCELOT (LEVEL 9)	5.99
		AUSTERLITZ (BATTLE OF)	11.99	LEISURE SUIT LARRY 2	14.99
		BAAL	6.49	LOMBARD RAC RALLY	8.99
		BALLISTIX	4.99	LORDS OF THE RISING SUN	9.99
		BALLYHOO (INFOCOM)	7.99	MAJESTIC	5.49
		BARBARIAN 2 (PALACE)	7.99	MOONMIST (INFOCOM)	13.99
		BATMAN THE MOVIE	11.99	MUSIC X	79.99
		BATTLE SQUADRON	8.49	NEVER MIND	6.49
		BLACK CAULDRON	6.99	NIGEL MANSELL'S GRAND PRIX	6.99
		BLOOD MONEY	7.49	NORTH AND SOUTH	10.99
		BLOODWYCH	6.99	PACLAND	5.99
		CARRIER COMMAND	9.99	PACMANIA	6.49
		CHESSMASTER 2000	6.99	PASSING SHOT (TENNIS)	9.99
		CHRONOQUEST 2	8.49	PAWN (MSCROLLS)	6.99
		CLOUD KINGDOMS	6.99	PHOTON PAINT	6.49
		CORRUPTION (M/SCROLLS)	6.99	POWER DRIFT	5.99
		CUTTHROATS (INFOCOM)	9.99	PURPLE SATURN DAY	5.99
		DRAGONS BREATH	9.99	ROCKET RANGER	9.99
		DRAKKHEN	13.99	SEASIDE (INFOCOM)	11.99
		DUNGEON MASTER (1 MEG)	10.99	SHADOW OF THE BEAST	9.99
		ELITE	9.99	SHOOT 'EM-UP CONSTR. KIT	7.99
		EYE OF HORUS	5.49	SILENT SERVICE (SUB SIM)	8.49
		F16 FALCON	12.99	SIM CITY	13.99
		FAST BREAK (VOLLEYBALL)	6.49	SKYCHASE	5.99
		FISH! (M/SCROLLS)	6.99	SKYFOX	4.99
		FOOTBALL MANAGER 2 + EXP.	10.99	SPACE HARRIER 2	6.99
		FOOTBALL MANAGER	10.99	SPELLBREAKER (INFOCOM)	13.99
		FUN SCHOOL 2 (2-5, 6-8 or 8+)	7.49	STARCROSS (INFOCOM)	13.99
		GNOME RANGER (LEVEL 9)	6.99	STARGLIDER	8.99
		GRAND PRIX CIRCUIT	6.99	SUPER HANG ON	8.99
		GRAVITY	6.99	SWORD OF SODAN	9.99
		GUILD OF THIEVES	6.99	TEENAGE QUEEN (STRIP POKER)	8.99
		HIT DISKS VOLUME 2 (MAJOR MOTION, LEATHERNECKS, TIME BANDIT, TANGLEWOOD)	8.99	THREE STAGS	6.99
		HOSTAGES	7.99	THUNDERBIRDS	4.99
		HUNT FOR RED OCTOBER	8.99	TRIAL VOL 2	7.99
		HYBRIS	3.99	TRIVIAL PURSUIT	8.99
		INFIDEL (INFOCOM)	7.99	TURBO CUP	4.99
		INGRID'S BACK (LEVEL 9)	7.99	TV SPON (US) FOOTBALL	11.99
		IN THE NAME OF THE DESERT (1 MEG)	10.99	TV SPORTS BASKETBALL	11.99
		JUNKY (M/SCROLLS)	6.99	UMS - UNIVERSAL MILITARY SIM.	7.99
		KICK OFF	6.99	VIRUS	6.49
		KID GLOVES	6.99	VOYAGER	6.99
				WATERLOO	10.49
				WATNESS (INFOCOM)	9.99
				XENON 2, MEGABLAST	7.99
				ZORK 1 (INFOCOM)	9.99

## Sega Megadrive

Official UK Version. Due Mid-Sept. Order now!



Megadrive + Altered Beast & Joypad + extra Joypad FREE **189.99**

## Megadrive Software

Arnold Palmer Golf	27.49	Revenge of Shinobi	27.49
Forgotten Worlds	27.49	Space Harrier 2	27.49
Ghouls 'n' Ghosts	34.99	Super Hang On	27.49
Golden Axe	27.49	Super Thunderblade	27.49
Last Battle	27.49	Thunderforce 2	27.49
Mystic Defender	27.49	Truxton	27.49
Rambo 3	23.99	World Cup Italia 90	23.99

## SONY 3.5" DISKS 65p each

## Atari Lynx

Official UK Version. In stock now.



Lynx colour handheld, mains powerpack, California Games **159.99**

## Lynx Software

Blue Lightning	23.49	Gates of Zendemon	23.49
Chips Challenge	23.49	Gauntlet 3	26.99
Electro Cop	23.49	Rampage	26.99

Amiga 512K RAM upgrade	44.99
Cumana 3.5" 880K disk drive	79.99
Star LC10 NLQ printer	169.99
Printer Lead	9.99
Competition Pro Extra joystick	14.99
Quickjoy Jet Fighter joystick	14.99
Konix Megablast joystick	5.99
Naksha mouse with mat	32.99
Mouse mat	4.99

OR JOIN EUROPE'S BIGGEST ADVENTURE CLUB

## OFFICIAL SECRETS

FOR ADVENTURES AND ROLE PLAYING AND MORE

All the benefits of Special Reserve plus:

• **Confidential.** Our 32 page bi-monthly magazine is essential reading for those interested in adventures or role playing games. Written by experts, *Confidential* has covered everything from How to Host a Murder to Which F16 Flight Simulator? Our agents, led by the Master Spy known as "The Boss Upstairs", seek out the secrets of RPG's, FRP's, MUG's, PBM's, Leisure Suit Larry, The Russians, Elvira... & more. **Note:** You can subscribe to *Confidential* without joining the clubs for **£15.00 (UK)** by entering "**CONFIDENTIAL SUBSCRIPTION**" on the order form.

• **Myth.** Written by Magnetic Scrolls, authors of The Pawn, exclusively for members of Official Secrets. Myth is a small adventure set in Ancient Greece. In it you'll meet The Ferryman, cheat Death and face the nine-headed Hydra. Myth includes the famous Magnetic Scrolls parser and optional stunning EGA graphics and is included in the price of membership.

**Amiga Format said:** "An excellent adventure... witty, cunning and just plain good fun! If you liked Fish! you'll probably like this, because they're very similar in style: you may even prefer Myth, it's that good!"

**Myth Ratings:** Crash 91%, CU 90%, Amiga Format 87%, TGM 85%

• **Drakkhen or Sim City (rrp 29.99).**

Of Drakkhen, **ST Action said:** "Drakkhen really impressed me. For me, the game was a subtle cross between my all-time favourite, Dungeon Master, and the SSI fantasy role-playing games. The graphics are superb.... Overall, Drakkhen is an excellent RPG, one that will take quite some time to beat" and **Zero said:** "Absolutely brilliant".

Of Sim City, **ACE said:** "Sim City is a politician's - or a gamesplayer's - dream... comparisons spring immediately to mind with Populous... but Sim City seems to have much more depth..." and **C&VG said:** "Sim City is utterly fab"

• **Help-Line.** Manned weekdays until 8pm and Saturdays - with solutions to most adventures.

Annual UK Official Secrets Membership including 6 issues of Confidential, Myth, Drakkhen or Sim City, Help-Line and Special Reserve membership. **£29.99**

## AMIGA 500 Computer ...399.99

### Two Jet Fighter Joysticks FREE

and F29 Retaliator, Rainbow Island, Deluxe Paint 2, E.F.T.P.o.t. Robot Monsters, TV Modulator & Mouse. PHILIPS 8833 stereo monitor .....249.99

PHILIPS TV TUNER for monitor .....49.99

MONITOR STAND fits over Amiga...19.99

INEVITABLY, SOME OF THE GAMES SHOWN MAY NOT YET BE RELEASED. ALL GAMES ARE DESPATCHED AS SOON AS POSSIBLE. Inter-Mediate Ltd. Reg. Office: 2 South Block, The Maltings, Sawbridgeworth, Herts CM21 9PG. VAT reg. no. 424 8532 51

PHONE 0279 600204

(SURCHARGE OF 50P PER GAME FOR TELEPHONED ORDERS)

(PLEASE PRINT IN BLOCK CAPITALS)

Name & Address \_\_\_\_\_

Post Code \_\_\_\_\_ Tel. \_\_\_\_\_

Computer \_\_\_\_\_ \*5.25"/3.5"

Payable to:

**Special Reserve or Official Secrets**  
**P.O. Box 847, Harlow, CM21 9PH**

Existing members please enter your Membership No. \_\_\_\_\_

**Special Reserve** £6 UK, £8 EEC, £10 World or

**Official Secrets** £29.99 UK, £34.99 EEC, £39.99 World

with Drakkhen ☐ or with Sim City ☐ AMIGA 5 and Myth ☐

PLEASE ENTER MEMBERSHIP FEE

Item

Item

Item

Software Prices include UK or EEC Postage. World software orders please add £1.00 per item. For non-software items such as joystick or blank disks please add 10% EEC or 25% World for carriage. Overseas orders must be paid by credit card.

Credit card expiry date \_\_\_\_\_

\*CHEQUE/POSTAL ORDER/ACCESS/VISA



# FUTURE CLASSICS

## Originality revisited

**S**O WHAT does the future hold? Perhaps Russel Grant can help, but what about computer games: What will be a classic in five or six years time? Products like Dungeon Master, Xenon and Blood Money spring to mind, but those games that are already classics, what will have happened to them?

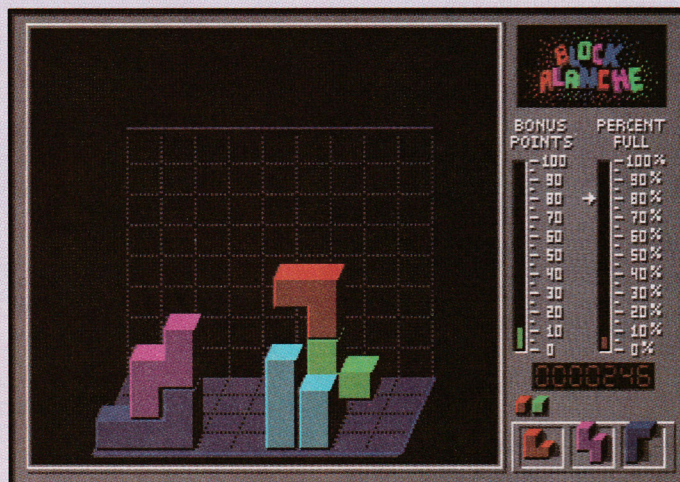
Live Studios have the answer here. Future Classics is the revival of games past, such games that were tops in the early eighties when electronic entertainment was all the rage. How many of you can remember 3D Monster Maze on the ZX81? How many of you remember the ZX81? You'll all know Pacman though and will be even more familiar with Tetris. So far you will be getting the gist of Future Classics.

If it sounds boring, you're right it does. I mean what's the point of re-releasing stuff that's seven years old if it's a day? Well, of course it's had a little spice added to it just to beef it up but isn't still mutton dressed as lamb?

*(Hold on a moment, young Banner. Although I hate those dreadful interruptions from edito-*

*rial staff, I feel I have to interject here to say that 3D Monster Maze on the ZX81 was one of the all-time great computer games - Aj)*

The honest answer to that is no. Sure all of the games have already done the rounds in one form or another but now they're back in a form which you've not seen before. Future Classics is also quite unique in its play methods. I can't say that I've ever found a game before that allows so many different methods of play. In its most basic form, each game can be played by a single player. Expanding upon that you can get a friend to take control of the keyboard or second joystick and play together, either against one another in competition or in conjunction. If you've not got a friend (and let's face it, you are a boring SOB!), Future Classics provides you with a partner. Three computer personalities are included for you to while away the hours. Two player games can take



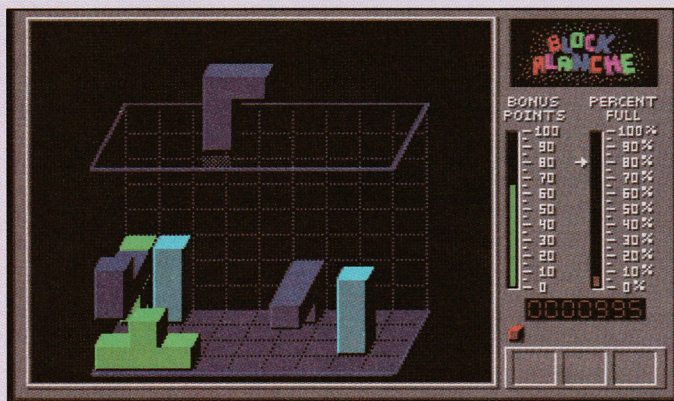
*Taking on a similar style to 3D Tetris, Block Avalanche offers infuriating gameplay to those who can stand the heat!*

place using a split screen method so that play can be simultaneous.

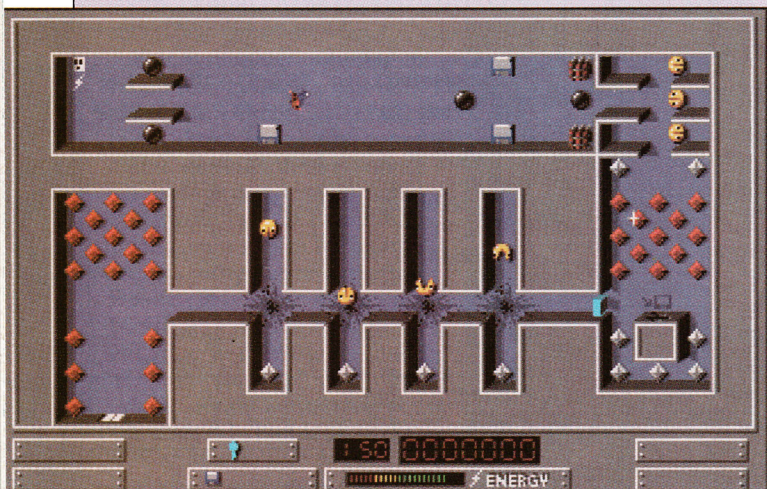
Future Classics contains five games; Diskman, Diet Riot, Tank Battle, Blockalanche and Lost 'n' Maze. Both Diskman and Diet Riot

are loosely based upon Pacman, in that they are plan view games with something chasing you. Diet Riot sees a obsessive slimmer in an environmental quest to close all the fast junk food joints in town. This is achieved by collecting all the food crates and dumping them in the trash whilst avoiding the various chunks of tasty menu morsels which endeavour to fatten you up. Unfortunately, the fatter you get the slower you move and the faster you are on your way to a coronary. So to work off those calories with speed, clamber on to the gym equipment and lift those weights.

Diskman involves a man and his quest to save his data from total corruption by destroying the computer viruses while Blockalanche is yet another version of the popular



*A simple game, but addictive none the less*

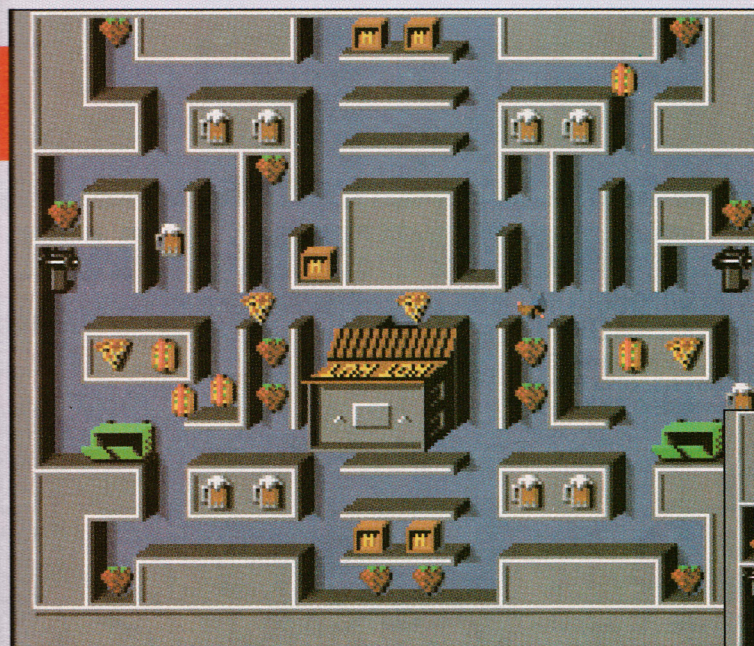


*An overhead game a la Pacman, making sure you collect the disks as you go*

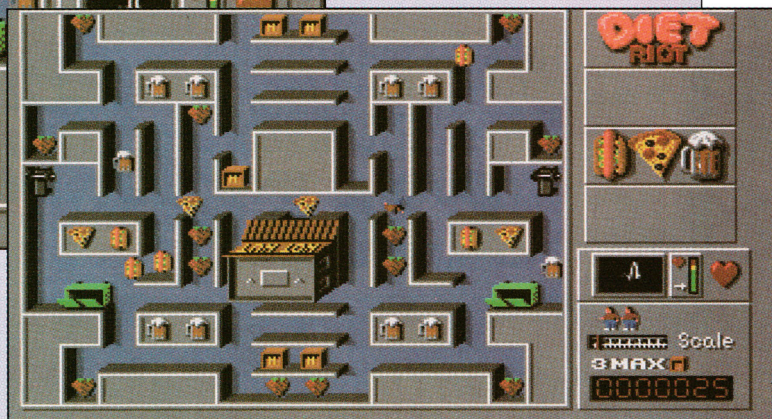
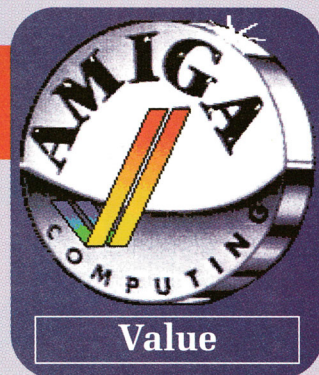


*Running around Maze is furious at the best of times, but watch out for those balls*

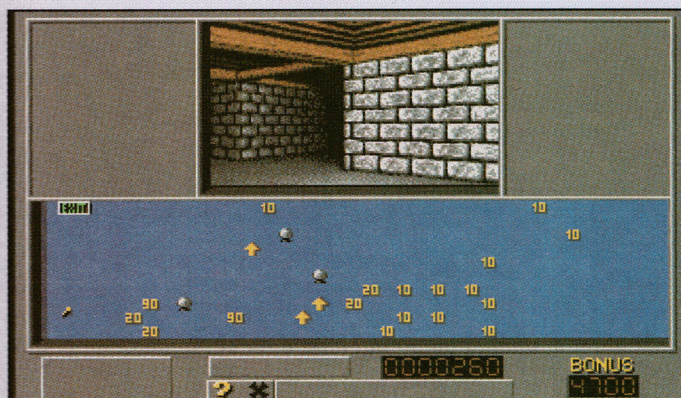




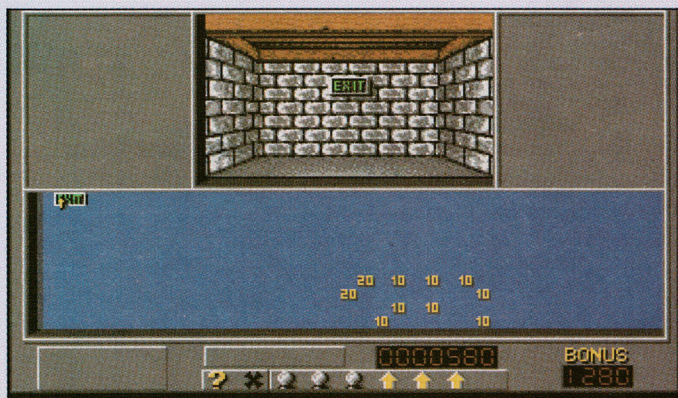
*You're overweight and there's only one way to conquer it – Diet*



*You begin the game as thin as a rake, but too many collisions with the pizza will see you burst at the seams*



*Viewed from first person perspective, Lost in Maze will have you searching for treasures beyond belief*



*After being lost in the tunnels for hours, you eventually stumble across the exit – phew!*

Tetris game (a game which I find terminally dull). However, Blockalanche adds a new dimension, displaying the screen in 3D and allowing you to select which blocks will appear, you can even position them before they drop. Lost 'n' Maze is a re-run of the ever popular 3D maze, find the exit

*Tank attack is basically a modern version of the old V.C.S. game, Pong!*

game and Tank Attack is a 30mm armoured vehicle shoot out from the days past.

Future Classics is simply a product which is well overdue. There are few original game being released today so I see no reason why even older style games should be forced into oblivion without digging so deep into the past you come up relics like Space Invaders. Although Diskman is a little ropy, Lost 'n' Maze is great fun as is Tank Attack. There's nothing wrong with a little nostalgia every now-and- again.

## Andrew Banner




### Future Classics

**£24.99**

## Electronic Zoo

Sound 

**Graphics** 

<b>Gameplay</b>	<div style="width: 80%; height: 10px; background-color: #f96;"></div>
-----------------	---

Value

## Overall – 78%



# Choices to Keep you ...at Truly Wizard



## AMIGA SCREENGEMS PACK

'BIG SCREEN' BLOCKBUSTERS BROUGHT TO YOUR AMIGA FOR SMALL SCREEN ACTION!

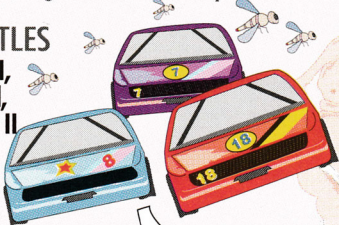
Amiga A500 with Modulator, Mouse, 1 Meg Internal Disk Drive, 512KRAM, All Connecting Leads, Kickstart 1.3, 4096 Colours, Built-in Speech Synthesis, Multi Tasking, Workbench 1.3 System Disk, & All Manuals.

Plus... FIVE GREAT SOFTWARE TITLES

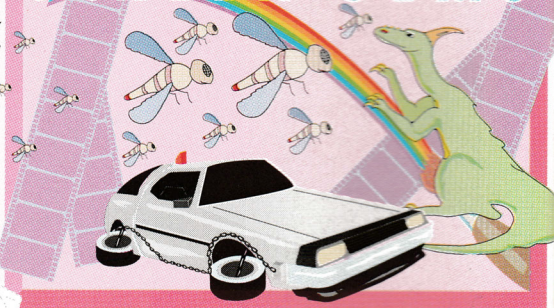
Back to the Future II, Beast II, Days of Thunder, Nightbreed, & for arts' sake Deluxe Paint II

Film Fan at a Price to make the Box Office tills ring...

**£365**



## SCREENGEMS



## AMIGA FLIGHT OF FANTASY PACK

ESCAPE REALITY WITH THE GREAT 'FLIGHT OF FANTASY' GAMES PACK!

Amiga A500 with Modulator, Mouse, 1 Meg Internal Disk Drive, 512KRAM, All Connecting Leads, Kickstart 1.3, 4096 Colours, Built-in Speech Synthesis, Multi Tasking, Workbench 1.3 System Disk, & Operation Manuals.

Plus...

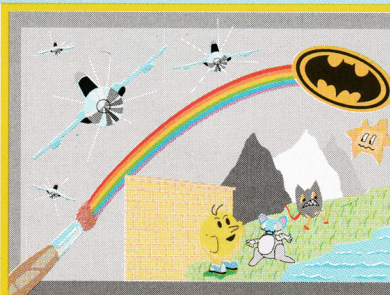
FOUR GREAT SOFTWARE TITLES

F29 Retaliator, Rainbow Island, Escape from the Planet of the Robot Monsters, Deluxe Paint II



Fantasy but at the Truly Realistic Price of Just...

**£365**



Same Batpack, same Batvalue at the same BATPRICE of only...

**£365**

## AMIGA BATMAN PACK

Amiga A500 with Modulator, Mouse, 1 Meg Internal Disk Drive, 512KRAM, All Connecting Leads, Kickstart 1.3, 4096 Colours, Built-in Speech Synthesis, Multi Tasking, Workbench 1.3 System Disk, & Operation Manuals.

Plus...

FOUR GREAT SOFTWARE TITLES...

Batman, F18 Interceptor, New Zealand Story and Deluxe Paint II

WE SAY CHOICE...and we mean it. Not only have you got the choice of THREE great Amiga packs but you can also order EXTRAS AT SUPER LOW PRICES, create YOUR PACK...Just right for Christmas!

NOW READ THIS!!!

## SCORCERORS PACK 4... The Ultimate!

CHOICE

THIS IS IT! Sorcerors Packs... 1, 2 & 3 TOGETHER

Just in case you can't believe it this is what you get...

1-Mouse Mat

1-Amiga Dust Cover

1-Megablaster Joystick

10-Blank Disks & Library Case

10 Super Games (rrp £224.50)

1-New Release Software Title from our...

"FIVE ALIVE" Selection \*

From only...

**£38\***

\* £42 when ordering "F19 Stealth Fighter" or "Betrayal"

Only when purchased with an Amiga

## CHOICE

### SCORCERORS PACK 1

1 Mouse Mat

1 Amiga Dust Cover

1 Megablaster Joystick

1 Ten Blank Disk in Library Case

Only... **£16**

Only when purchased with an Amiga

## CHOICE

### SCORCERORS PACK 2...Extra Games Special!

2 DATASTORM, DUNGEON QUEST, E-MOTION, GRAND MONSTER SLAM, KID GLOVES, POWERPLAY, RVF HONDA, SHUFFLEPUCK CAFE, MICROPROSE SOCCER, TOWER OF BABLE

Great games with a retail value of £224.50, Yours for just...

**£24**

Only when purchased with an Amiga

## CHOICE

### SCORCERORS PACK 3...Top Title Special!

3 Purchase any of the LATEST GAMES TITLES from our "FIVE ALIVE" software selection and pay EVEN LESS than the advertised prices...Buy as many as you like, phone us now for details!

Only when purchased with an Amiga

## ALL MERLINS PRICES INCLUDE V.A.T. AND POSTAGE (UK Mainland)

Whilst every effort is made to ensure that the information shown in our advertisement is correct, you should ALWAYS confirm any Offers, Prices, Availability etc. prior to placing your order. We endeavour to supply everything as shown and we will ONLY change anything should it be forced upon us by manufacturers or our suppliers. Because our advertising is booked so far in advance, Merlin therefore reserve the right to alter equipment specifications, withdraw any product/offer or update prices (and that can be either up OR down), without prior notice. PLEASE CHECK DETAILS PRIOR TO ORDERING.

Merlin guarantee NEVER to supply anything that has been subject to change without you, the customer, being informed of and agreeing to that change.

**ORDERING:** Just phone our 24 hour order line using your Access/Visa card, OR, send a cheque/postal order with your requirement details. (Cheques need clearance unless issued by Bank/Building Society for you)

**DELIVERY:** Goods will be despatched by post FREE OF CHARGE to UK Mainland addresses unless you request courier service (up to 25Kg) as follows:  
NEXT WORKING DAY...add £6 to order, TWO WORKING DAYS...add £5  
THREE WORKING DAYS...add £4, SATURDAY DELIVERY...add £12  
(Merlin will ALWAYS despatch goods day of order unless otherwise discussed)

**WARRANTY:** Goods that prove faulty within 30 days will be exchanged for NEW. After 30 days and within 12 months from purchase, faults will be rectified by the relevant manufacturers' repair agent and returned to you by courier.

'Five Alive' software will ONLY be exchanged for the SAME TITLE; no refunds can be granted (...due to piracy of software by a minority who spoil things for everyone)

**COLLECTION:** Merlin Express are predominantly a mail order company but we welcome custom to our trade/collection counter who wish to pick up goods from us. Why not pay a visit, we will always be pleased to help you with your enquiries.

G R E A T V A L U E , T H A

ALL our currently advertised offers supersede any previously advertised offer(s) and goods are NOT supplied on a trial basis. E & O E.

24 HOUR

0602 441442

VISA

HOTLINE



# Spellbound Prices!

# MERLIN

## "FIVE ALIVE" SOFTWARE SELECTION

FIVE OF THE LATEST SOFTWARE RELEASES BROUGHT TO YOU BY MERLIN EXPRESS AT A PRICE TO BEWITCH...



### DICK TRACY

Arcade action-Disney Software Entertainment. Retrace the steps of Disney's Dick Tracy in 3 exciting games. Rescue Tess at the Ritz and stop Big Boy, Flattop, Pruneface and Mumbles from escaping to their cars.

**£19.99**

(rrp £24.99)

### TEENAGE MUTANT HERO TURTLES

This is probably going to be the BIGGEST title this Christmas. All the favourites are there, Donatello, Michelangelo, Raphael and Leonardo in an action packed game. COWABUNGA TIME!

**£19.99**

(rrp £24.99)

### F19 STEALTH FIGHTER

Forget about other Flights of Fantasy... This is the Real World! FLY over 409,600 sq miles; FLY Fast; FLY the real thing! Over 3300 missions possible, cold, limited or conventional war, 4 grades of opponent, 4 real world scenarios. F19 Stealth Fighter is here!

**£23.99**

(rrp £29.99)

### BETRAYAL

Set in medieval times this game involves economic, military and political relationships. Depose and replace the King and Bishop using ALL your power for fighting, financial and political endeavour.

**£23.99**

(rrp £29.99)

### FLIMBO'S QUEST

Cute action with some pretty impressive graphics and parallax scrolling. Young Flimbo has to run about a fairyland world and rescue the damsel from wicked deranged professors.

**£19.99**

(rrp £24.99)

Please note the above titles are advertised now based on the release dates issued by software distributors. Each title should be available on or before the sale date of this magazine. We do not however accept responsibilities for delays in release dates by software houses or their distributors. We strongly recommend you check availability before placing your order. Faulty software will ONLY be replaced with same title and NO REFUNDS will be given. Prices inc. P&P

**EXTRA DISCOUNT**  
when you buy more than one title or with an AMIGA!

INCLUDE POSTAGE  
PRICES

## MONITORS

Including FREE Amiga Leads!

COMMODORE 1084S **£259**

14" Stereo High Res. Colour

PHILIPS CM8833 **£249**

14" Medium Res. Colour

Twin speakers, Green screen switch, with tilting stand.

CHECK FOR LATEST PRICES & AVAILABILITY ON ALL MONITORS

PHILIPS AV7300 TV TUNER **£39.95**

Receive TV programmes on your Commodore or Philips Monitors at the flick of a switch with this elegant unit.

RRP £74.74, Pay just £34.95 if bought with a Monitor!

**FREE** 12 Months on site Maintenance with CM8833 Monitors and AV7300 Tuners **FREE**

PHILIPS Tilt/Swivel Stand **£14.95**

OR pay just £10.95 when ordered with a CM8833 Monitor

## MERLIN SUPER MONITOR PACK

PHILIPS CM8833 MONITOR (rrp £310.49)

PHILIPS AV7300 TV TUNER (rrp £74.74)

PHILIPS TILT/SWIVEL STAND (rrp £14.95)

QUALITY CM8833 DUST COVER

**FREE...12 Months on site Maintenance with Monitor & Tuner!**

**£289**

## DISK DRIVES

CUMANA CB 354 1Meg. 3.5" Single Internal **£69**

CUMANA CAX 354 1Meg. 3.5" Single External **£85**

CUMANA CAX 1000 1Meg. 5.25" Single External **£129**

ROTEC 1Meg. 3.5" Single External **£79**

A590 HARD DRIVE 20Mb autoboot for A500 **£379**

Including the following great software...

• SPRITZ PAINT • FANTAVISION • COMIC SETTER

## STAR PRINTERS

Including FREE Amiga Leads and FREE EXTRA Ribbon!!!

STAR LC 10 Mono

STAR LC 10 MkII

STAR LC 10 Colour

STAR LC 24/10 Mono

9 Pin Dot Matrix, 120/25cps MONO **£165**

As LC10 Mono, 25% Faster 150/30cps **£185**

9 Pin Dot Matrix, 120/25cps COLOUR **£205**

24 Pin Dot Matrix, 180/60cps MONO **£245**

STAR LC200 Colour

STAR LC24/200 Mono

STAR LC24/200 Colour

9 Pin Dot Matrix, 180/45cps COLOUR **£209**

24 Pin Dot Matrix, 200/67cps MONO **£259**

24 Pin Dot Matrix, 200/67cps COLOUR **£299**

FABULOUS NEW RANGE FOR THE 90'S FROM STAR, RING FOR FULL IMPROVEMENT DETAILS!

With every Star Printer you will receive a FREE EXTRA RIBBON in addition to the one supplied by Star - Only from Merlin Express!

Worth up to **£12.50**

## AMIGA ACCESSORIES

### DISK STORAGE BOXES

40 Capacity **£6.95**

80 Capacity **£8.95**

MOUSE MATS **£4.95**

DUST COVERS... **£5.95**

Amiga, Star Printers, Philips Monitors

A501 0.5Mb RAM PACK **£98.95**

WTS 0.5Mb RAMPACK Compatible with

the latest A500's, } No Clock **£31.95**

Enable/Disable } With Clock **£39.95**

KONIX SPEEDKING J/S **£10.95**

QUICKSHOT TURBO II J/S **£10.95**

ENDORSED BY THE NATIONAL ASSOCIATION OF PRIMARY EDUCATION

NEW NEW NEW NEW NEW NEW

### AMIGA FIRST STEPS

Amiga A500 Computer  
A501 0.5Mb Upgrade  
Pro-Write (W.Proc.)  
Deluxe Paint II  
Deluxe Print  
Infofile  
Music Mouse  
Logo (Language)  
Talking Turtles

Let's Spell at Home  
BBC Emulator  
10 Commodore Disks  
Mouse Mat  
Resource File

It doesn't need a scholar to work out this great offer...

**£539**

Plus... An introductory Video approved by National Council of Education Technology

Why not add a Scorers Pack too... Learning Made Enjoyable

NEW NEW NEW NEW NEW NEW NEW

## COMMODORE BRANDED DISK PACK OFFER

Why buy unbranded, when you can get our Commodore Disks at such low prices?

BOX OF TEN COMMODORE 3.5" DISKS

Only... **£9.45** inc. p&p

FIFTY (50) COMMODORE 3.5" DISKS

Only... **44.95** inc. p&p

HUNDRED (100) COMMODORE 3.5" DISKS

WITH A FREE LOCKABLE DISK STORAGE BOX

Only... **84.95** inc. p&p

## FREE HOLIDAY OFFER

...only whilst stocks last, we at Merlin will give you a FREE HOLIDAY VOUCHER BROCHURE with every Amiga purchased! Ask us for full details.

**FREE**

Please note at Merlin we stock ONLY...

### GENUINE UK SPEC EQUIPMENT

Some dealers aren't so ethical and because they stock 'Grey Imports' you may find their products slightly cheaper than ours. However, buyers BEWARE if the product you buy isn't UK sourced it may not carry an

OFFICIAL UK WARRANTY  
- All Merlin's Do!!!

### Why don't you take advantage of MERLINS BULK BUY DISCOUNT!

Remember if you are buying more than one item we can usually make you an offer of an extra discount. eg if you want to buy both a computer AND a printer it will cost you less than the two separately advertised prices!

PHONE NOW AND DISCUSS A "BULK BUY" DEAL WITH ONE OF OUR STAFF

### If you see something advertised at a cheaper price, MERLINS PRICE REVIEW POLICY...

means that we will try our hardest to compete. At the time of placing our ad we set prices that we feel are some of the most competitive around. However should a price drop in the meantime we promise to pass that on. Let us know if we're not competitive, we'd like the chance to try and better the competition.

# MERLIN

EXPRESS LIMITED

DEPT AMC/M6, UNIT C7, THE ROPEWALK INDUSTRIAL CENTRE,  
STATION ROAD, ILKESTON, DERBYSHIRE. DE7 5HX  
TELEPHONE: 0602 441442 FAX: 0602 440141

S T H E M A G I C O F M E R L I N



PRICES GO OFF THE RAILS! PRICES GO OFF THE RAILS!



## 3.5" DISCS & BOXES

35 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£21.95
45 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£27.95
55 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£32.95
65 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£38.95
75 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£42.95

100 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£49.95
150 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£69.95
200 3.5" DS-DD 135 TPI WITH 100 CAPACITY LOCKABLE STORAGE BOX .....	£79.95

OUR 3.5" DISCS ARE **VERY CAREFULLY SELECTED** TO GIVE YOU 100% ERROR FREE PERFORMANCE. EACH DISC IS OFFERED WITH OUR 100% MONEY BACK GUARANTEE AND IS SUPPLIED WITH LABELS

### 5.25" DISCS & BOXES

25 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£13.50
30 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£27.95
50 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£24.50
100 5.25" DS-DD 96 tpi with 100 capacity lockable storage box .....	£29.50
200 5.25" DS-DD 96 tpi with 100 capacity lockable storage boxes .....	£52.99

Our 5.25" discs are **very carefully selected** to give you 100% error free performance. Each disc is offered with our 100% money back guarantee and is supplied with labels

### PRICE & QUALITY GUARANTEE

MD Office Supplies prides itself on offering the highest quality product at the best possible prices. In the unlikely event you should ever see a comparable product offered cheaper DO NOT HESITATE, give us a call because we will not match it

**WE WILL BEAT THAT PRICE  
WE ABSOLUTELY GUARANTEE IT**

### LOW LOW PRICES FOR BULK BUYERS

For all you large users we have some **unbeatable BULK RATES ON OUR SUPERB DS-DD 3.5 DISCS**

400 DS DD 135 tpi .....	£160.00
500 DS DD 135 tpi .....	£195.00
600 DS DD 188 tpi .....	£229.00
800 DS DD 188 tpi .....	£295.00
1000 DS DD 135 tpi .....	£320.00

AS ALWAYS LIFETIME GUARANTEED UNQUESTIONABLE RELIABILITY. EACH DISC IS SUPPLIED WITH LABEL.

### HIGH DENSITY 3.5" DISCS

10 DS HD 3.5" DISCS IN LIBRARY CASE .....	£14.99
30 DS HD 3.5" DISCS WITH 50 CAPACITY BOX .....	£39.95
50 DS HD 3.5" DISCS WITH 100 CAPACITY BOX .....	£49.95
100 DS HD 3.5" DISCS WITH 100 CAPACITY BOX .....	£89.95

### ACCESSORIES



250 capacity lockable stackable box only .....	£19.95
Deluxe 100 capacity 3.5" box .....	£7.95

Amiga replacement drive (inc external power supply) .....

Amiga replacement mouse .....

Head cleaners .....

Neoprene Mouse Mat .....

### SONY DISC OFFER

We have very limited supplies of **GENUINE SONY BULK DISKETTES** at give away prices. These diskettes come in Sony cuters to prove authenticity this is the real thing. Please quote Sony offer when ordering.

100 genuine Sony diskettes DS-DD 135 tpi .....	£44.95
200 genuine Sony diskettes DS-DD 135 tpi .....	£82.95
400 genuine Sony diskettes DS-DD 135 tpi .....	£159.95
800 genuine Sony diskettes DS-DD 135 tpi .....	£309.95

With each 100 Sony why not have a deluxe 100 box only £2.99 (Max 2 per person)

This offer must end soon  
**Hurry Hurry**

With each 100 Sony why not have a deluxe 100 box only £2.99 (Max 2 per person)



Trade Accounts Welcome

**M.D. OFFICE SUPPLIES**  
18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS  
TELESALES HOTLINE: 0689-61400

All prices include VAT and delivery UK only. E/OE



Education Orders Welcome

PRICES GO OFF THE RAILS! PRICES GO OFF THE RAILS!





# THE DISK



## SWIV DEMO

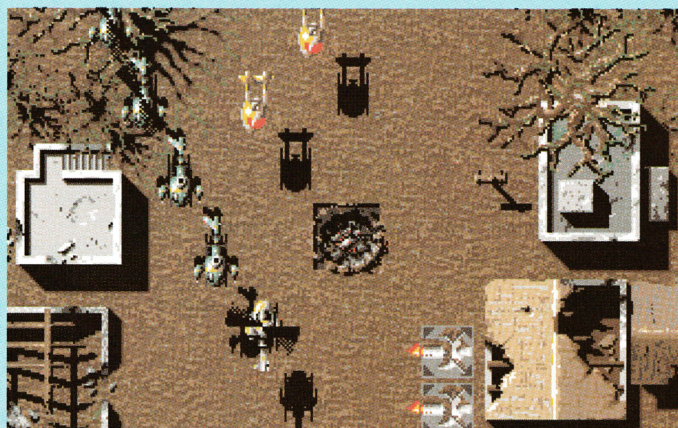
BACK at the start of this year when the guys at Random Access saw Battle Squadron being hailed as a better shoot-'em-up than Xenon 2, they vowed to write an even better one. It was to be the sequel to Silkworm and would be called Silkworm IV, "because it'll be four times as good."

At that time nobody took into consideration that Silkworm was an arcade license, which meant that if Random Access wanted to use the name Silkworm, it would cost them, despite the fact that Silkworm IV would have been a totally original game, not a coin-op conversion.

I'm telling you all this so you understand where the name SWIV came from. Silkworm IV - SWIV. Got it? Good.

Out on the Storm label in November, by the way.

This SWIV demo has been specially programmed for you. It's not the first level, or anything like that. What you've got are the opening



background graphics re-mapped to show off some of the features from later in the game.

SWIV doesn't have levels - it's one continuous vertically scrolling landscape with 12 intermediate enemy installations where the scrolling stops until you've zapped everything in sight. After each installation has been wiped out, the landscape changes. In the full

game there will be a jungle landscape, an icy wasteland, a space graveyard, a science fiction landscape... I don't want to spoil it for you, so I'll stop giving the game away.

The demo is single player: the game itself will be one or two player.

You'll start off with one player in the helicopter and the other in

the jeep, but at some time during the game you'll be able to change vehicles so that you can have a two-chopper or two-jeep game if you like.

There's very little thinking involved in playing SWIV. The idea is simply to blast your way from one end of the game to the other, leaving behind a trail of destruction.

There will be several power-ups to collect, and it will be important in certain places which power-up you take on board.

An expert player will take 40 to 50 minutes to finish the whole game, depending on how long it takes to finish off the intermediate installations, so it'll be no mean feat if you get to the big end of game sequence, which is really something special and a trademark of the Random Access development team.

You don't need any instructions to play this SWIV demo: Just plug in a joystick.

CRIBBAGE is an old English card game, said to have been invented in the 16th century by Sir John Suckling. It is a refinement of an earlier card game called Noddy.

To start the game, double click on its icon. When the main layout appears you will see a scoreboard at top-left. Computer is blue, you are red.

There is a grey box at top-right showing how many games have been won by each player and an orange box at top-centre showing the total value of the cards which have been played.

The green box on the left holds the cards in the crib. This also indicates (at the top of the box) who has the crib. The crib alter-

### Source code

THE source code for Cribbage is on the cover disk in the Cribbage drawer in a crunched format. It can be examined by double clicking the Cribbage.BAS icon. Select the Print gadget when viewing to get a hardcopy.

Should you wish to play with or customise the listing, you will have to decrunch it first. The program for doing this, Decrunch, is in the C: directory of the cover disk.

nates after each hand. The large box to the right of the crib holds the cards during play. The white box on the right holds the com-

## Cribbage

puter's cards, the blue area below the crib box and the play box will hold your cards.

There is a gadget marked REVEAL OFF underneath the box which holds the computer's cards. Use this if you want to cheat during play.

Prompts and messages are displayed in the box at the foot of the screen.

The game starts with a question: Do you want muggins rules? If you choose "Y" you will have to add up and declare the score in your

own hand yourself.

With muggins rules switched on you must input your score using the up and down arrow keys, then hit Return. Your opponent (the computer, in this case) will decide what it thinks your score is. If you have omitted to score something, the computer will draw your attention to it and score those points for itself.

In a game between two humans this action is accompanied by a



## Tactics



loud cry of "muggins" so everyone else in the room can hear.

If you are new to Cribbage you should not play muggins rules until you are comfortable with the scoring system – the computer will automatically add up your score for you.

Next we cut for deal. In this implementation of the game, whoever cuts lowest wins the deal and the first crib.

Six cards are dealt to each player. Yours will be displayed on the screen face-up, but the computer can't "see" them. Your first job is to discard two cards into the crib.

The dealer may not look at the crib yet, but at the end of the game any scoring combinations it contains count in his favour. So before we go any further with the rules, you need to know what scoring combinations are allowed.

The order of cards in each suit runs from Ace (low) to King (high). Each card has a point value equivalent to the number of pips on its face. The court cards count as 10 each. The scoring combinations and the amounts they score are as follows:

**Fifteen:** Any two or more cards totalling exactly 15, score two points.

**Pair:** Two cards of the same rank, score two points.

**Three of a kind:** Three cards of the same rank, score six points.

**Four of a kind:** Four cards of the same rank, score 12 points.

**Run:** Three or more cards in sequence, score one point per card.

**Flush:** Four cards of one suit in the hand, score four points.

**Flush:** Four cards in hand and start card of same suit, score five points.

Some examples of a fifteen are 7-8, 5-Q and 2-4-9.

A hand containing 2-4-4-9 would count fifteen twice, once for 2-9 plus the first 4, and again for 2-9 plus the second 4; the hand would also score two for the pair (six in total). But a hand 7-4-4 counts fifteen only once because the two 4's must be used once together instead of once in each order to make up the total. They still count two points for the pair, of course.

If a player's four hand-cards are

WHEN presented with your six cards, study all permutations to see which four cards will give you the best score. Remember that there is a fifth card, the start card, to be taken into consideration. You will only see this once you have discarded two cards, so you will have to use educated guesswork (luck) here. Assume the start card will help your scoring.

Also take into consideration who has the crib. If it is the computer's crib, try not to throw it too many points. Giving it a pairs of 5's would be close to disastrous.

Unless you cheat (by selecting Reveal On) you will not know what

of the same suit, he may peg four points for the flush, or five points if the start card (see below) also matches.

A score is credited for each different combination of cards that can be made. Any individual card may be used in different combinations or more than one of the same type. So a hand of 7-7-8-9 is scored cumulatively as follows: Fifteen 2, fifteen 4, pair 6 and two runs of three 12. Note that the 7's not only count together as a pair, but also can each be used in turn to score two different fifteens and two different three-card runs.

So that's the points system, now back to the game.

After the discarding, the non-dealer cuts the pack and the dealer takes the top card of the bottom half and lays it face up on the top. This card is known as the start card. If it is a Jack, the dealer immediately pegs "two for his heels".

Before any combinations are scored, a little game of cat and mouse is played with the four cards each player is holding.

Starting with the non-dealer, each player in turn plays one of his cards face up in front of himself. As each card is played, the cumulative total of the cards played so far is displayed. If either player adds a card which forms a scoring combination when considered in conjunction with the previous card or cards consecutively played, he is entitled to peg the points value for it. For example:

Non-dealer plays a 4; dealer plays a 6 making the count 10; non-dealer plays a 5 making the

two cards the computer discards.

If you play first, avoid laying a 5 or a 10. Chances are the computer will have either of these also, to make a total of fifteen and peg two points. Watch out for the computer playing first.

If it plays a 10, chances are that it also has a 5, so if you lay a 5 you will get two points for fifteen and the computer will pair it off for two points itself.

Try to avoid making the count reach 21 because the computer may hold a 10 or a court card to peg two points for 31.

The computer will try very hard to make runs during play, be aware.

count 15, at which point he pegs two points for bringing the count to 15, and another three points for forming the three-card sequence 4-5-6, even though they did not actually appear in that order.

If the dealer now adds a 3, he would score four points for a run of four, extending the sequence to 3-4-5-6.

Flushes do not count in this part of the game.

The play continues so long as neither player brings the combined count above 31. If you cannot add a card without exceeding this total, you must pass by clicking the GO button, whereupon the computer must add as many cards as it can without exceeding 31.

Whoever plays the last card pegs one point, or two if he brings the count to exactly 31.

If either player has cards left unplayed, those played so far are turned face down and a new series is played with the remaining cards up to 31 as before, the first card being led by the opponent of the player who played the last card in the preceding series. If this still fails to exhaust all the cards, yet another series is started. And so on until all the cards in each player's hand have been played.

Now we get the main scoring round. Starting with the non-dealer, each player scores for any combinations his hand contains,

considering the start card as if it were part of his hand. Whoever holds the Jack of the same suit as the start card pegs "one for his nob".

After the non-dealer counts his hand, the dealer does the same. Lastly, the dealer turns up the cards in the crib and scores it as if it were yet another hand, again counting the start card as part of it.

As soon as one player reaches the target score of 121 (twice round the peg board), play ceases and that player has won the game.

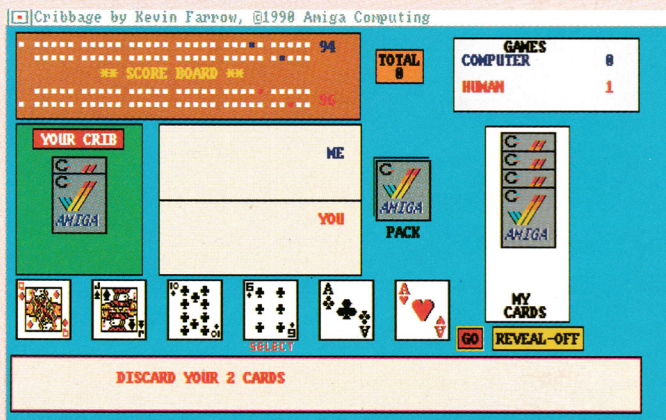
## 512k users

THE first thing Cribbage does on running is open a couple of large, med-res, four bitplane screens. It therefore requires a fair amount of memory. The game has been tested on a vanilla A500, booting from the cover disk, and it runs perfectly well provided all other windows are closed before double clicking its icon.

If Cribbage fails to run and you get an error requester, close down all windows except the Cribbage drawer one (including the main disk window), type endcli into the CLI window, drag the Cribbage icon on to the workbench and then close down the Cribbage drawer window.

Cribbage will now run correctly on a vanilla A500 without problems, unless, of course, you have run something else previously which hasn't given back all of the memory it was using.

CRIBBAGE was written in HiSoft BASIC by 29-year-old Kevin Farrow. This program, plus its support files and documentation, is Copyright ©1990 Amiga Computing.







# VirusX 4.01

IT is a sad fact that more than half of the floppies I get sent with cover disk contributions on are infected with viruses. Mostly Lamer II. There's no excuse for it these days,



what with a dozen or more very good virus protection systems around, all of them free.

The most famous is Steve Tibbet's VirusX, and here's the very latest official upgrade, version 4.01, direct from Canada.

A lot of changes have been made since 4.0, although experienced VirusX users will only notice one difference in operation. The most important change is that the program is now compatible with AmigaDOS 2.0. New users stay around for a while and I'll explain the best ways of using the program. See the release notes on the cover disk for all the details.

By far the safest way of using VirusX is to launch it from your startup-sequence somewhere just before LoadWB. VirusX first checks memory to see if anything is there that shouldn't be there, then it will

open a small window on the Workbench title bar and sit in the background twiddling its bytes until you stick a disk in any drive, whereupon it will check the boot-block of said disk and report on what it finds.

If this is what you intend to do, and I strongly suggest you do, then make sure you copy the VirusX program into the C: directory of your everyday boot-up disk.

The one thing VirusX can't check for are viruses that attach themselves to files. Which is why another program, KillVirus (abbreviated to KV), is distributed in the package.

Again, you should copy KV into the C: directory of your boot-up disk so the command is available if you should need to use it. Unlike VirusX, KV cannot be run from the workbench, which is why there is no icon for it in the VIRUSX401 drawer. Double click on KV.DOC for details of how to use KillVirus.

The full documentation for the previous release of VirusX is on the disk and is all relevant to the current version. See the 4.01 release notes to find out about the new extras.

## Keep cool

SOME programs, notably those that create recoverable ram disks, take over the Amiga's CoolCapture vector for their own use. If you are running such a program, like RRD for example on last month's cover disk, then VirusX will immediately warn you that the CoolCapture vector is not zero.

Alas, some viruses use this vector to hide themselves and stay alive through a warm reboot, but if you are sure that your CoolCapture vector is being used by something you are running and not by a virus, then it is quite safe to click "No" when VirusX asks if you want to reset it.

You can prevent VirusX from checking the CoolCapture vector by using the -c option in the command line.

VIRUSX 4.01 is freely distributable but remains Copyright ©1990 Steve Tibbet.

# Marilyn

THIS WILL get the old blood corpuscles racing round the arteries – a moody little ditty called Marilyn by Steve Cooper of Rochester in Kent.

Steve uses Noisetracker v1.0 to create his tunes. He's a self-taught musician, playing drums and guitar, and has been 'tracking for 18 months or so now. After a day working in the local Nursery (that's little plants, not little pests) Steve likes nothing more than to sit down at his A500 and create tunes using his own sound samples.

The tune we have here uses fairly standard samples – experienced 'trackers will no doubt recognise one or two of them – but Steve also produces compositions he calls "soundscapes" made up of synthesised animal noises and snatches from films.

Marilyn, on the other hand, is an excellent example of how to create a really together tune using very few samples. A pulsating bass line plus clever slide and echo effects on the guitar solo show off Steve's expertise with Noisetracker. One or two people I've played it to reckon the female gasp spoils it, but I guess that's just a matter of taste.

*Are you a budding musician looking for fame and fortune? If so, perhaps the Amiga Computing cover disk can give you a little push up the ladder. You never know who might be listening to*

*your music. For instance, Howie Davies got commissioned by a software house after Rock The House appeared on the cover disk.*

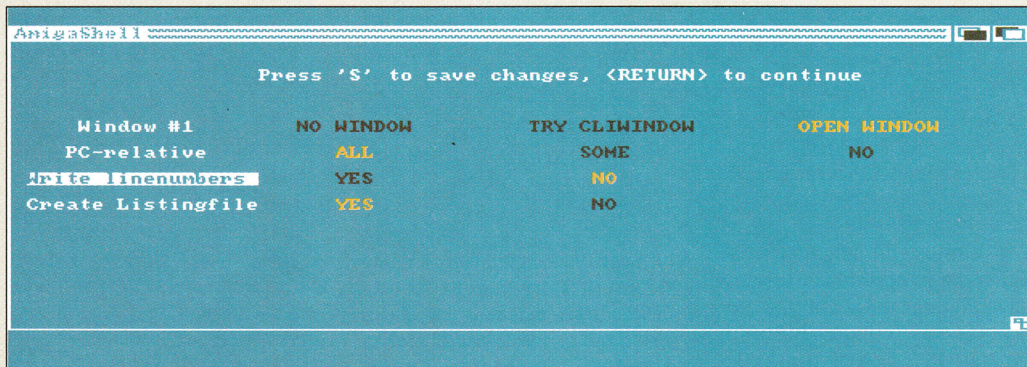
*Original or classical stuff only please, preferably in self-*

*contained modules. If you insist on sending executable tunes, then try not to send the kind that freezes the mouse pointer or uses the left mouse button to quit: Right button or both is better.*





# Cursor v1.1



CURSOR takes programs that are written for the AmigaBASIC interpreter and turns them into programs that can be run directly from CLI or Workbench.

In doing so it compiles your BASIC programs into machine code, which means that the resultant program will run faster than the original. Not all the AmigaBASIC keywords are implemented in this version, although most are. For a full list of supported commands and functions look at the file Keywords.DOC in the Cursor drawer.

The best way to use Cursor is to copy it into the C: directory of your boot-up disk. If you're still working from a bog-standard Workbench disk you'll need to make some room first by deleting some of the things you don't use very much.

You must also copy the file bas\_runtime.library (in the libs directory of the cover disk) into the LIBS: directory of your boot-up disk. All programs compiled with Cursor need this library to be present in LIBS:, and so does Cursor itself. Cursor also needs the four maths libraries: mathhfp.library, mathtrans.library, mathieeedoub-bas.library, and mathieeedoub-trans.library, which must be in LIBS: or in rom (mathhfp.library is in rom on 500s and 2000s).

Cursor is best operated from the CLI – although it is quite feasible to IconX it if you want – by supplying the name of the BASIC program as the parameter. If Cursor finds no errors it will create an executable file whose name is that of the source file without its extension.

If you boot from the cover disk you will be able to play with Cursor straight away because everything is where it should be.

After the cover disk has booted drag the CLI window up to the top of the screen and open it to its full

height. Then type:

```
cd cursor
```

to get into the Cursor directory. If you're curious, use Dir to see what files are there. You'll see a few example programs with .BAS extensions. The one we're going to use displays a list of prime numbers. So type:

```
copy primes.bas ram:
```

You can work from floppy if you want, but it's quicker from ram. Now we've got our BASIC program where we want it, type:

```
cursor ram:primes.bas
```

Cursor will load and decrunch, then a copyright message will appear followed by the filename ram:primes.bas automatically supplying itself to the prompt. The compiler will then make two passes of the source code and create the program.

It takes just a few seconds. When it's finished type:

```
dir ram:
```

and you'll see three things. Firstly there is a T directory. While it is working the compiler writes some temporary files into T:, so it is best to assign it to the ram disk. The cover disk startup- sequence has done this for you.

Next there is the primes.bas file we copied to ram, and lastly the program Cursor has created, called primes. To run it type:

```
ram:primes
```

A window will open and lots of numbers will scroll past, all the prime numbers between 2 and 1,000 in fact. To finish the program at any time, click the window's close gadget.

Not very impressed, are you? Well, Primes is just a simple program to prove that it works. Now

you've successfully compiled something small, go ahead and compile a more complicated program, ManSing.BAS, which is a Mandelbrot Set image generator. Although the compiled ManSing may appear to take an age to draw its image (about 40 minutes), the same thing running under AmigaBASIC takes hours and hours and hourzzz...

It is important to remember that you can only compile BASIC source files which have been saved in Ascii format, so make sure you use SAVE "filename", A in the AmigaBASIC interpreter else you'll be getting compiler error messages.

If you run Cursor without a filename as a parameter and press Return when asked for the name of the source file, you can change some options which influence the compiled programs. Actually, you can do this either in the menu that appears when you press Return after you have started Cursor, or with the OPTION keyword in the source file. The following options are available:

**NOWINDOW:** No window is opened automatically when the compiled program is started.

**TRYCLIWINDOW:** The compiled program will try to use the CLI window as a window with the number 1.

If this is not possible – for example, if the compiled program was started from Workbench – a new window is opened. You should not use graphics commands in the CLI window because you can inadvertently overwrite the window's border.

**OPENWINDOW:** A new window with the number 1 is always opened on the Workbench. This is the default option.

**ALLPCRELATIVE:** Cursor assumes that all branches in the compiled machine code program do not reach further than 32k. The compiled program will be shorter if you use this option.

**SOMEPCRELATIVE:** Cursor only assumes that all branches within subprograms do not reach further than 32k.

**NOPCRELATIVE:** All branches can reach as far as they want. This is the default option because it is the safest assumption.

**WRITELINENUMBERS:** The line numbers of the source file are written into the compiled programs. They will be displayed if the compiled program aborts with an error message. But the compiled program will also get bigger and run slower.

All programs compiled by Cursor are pure, and Cursor sets the pure bit of the programs automatically.

Compiled programs can be started from the CLI or the Workbench (provide your own tool icons).

Parameters passed from the CLI are treated as if the user typed them in using the keyboard after the program has started, separating them with the Return key, so they can be read and processed with INPUT statements.

If an error occurs while a compiled program is running, an error message will be written either to standard output (if it exists) or a requester will appear.

You will see additional pieces of information in the requester, like a more exact description of an I/O error or perhaps the number of the line in the source file where the error occurred.

THE DATA





### Disk Copying!

WE always say the first thing you should do when you get your cover disk is to make a backup copy for yourself. There are good reasons for this as I'm sure you'll understand, but this month we have an exceptional case.

The wonderful SWIV demo uses a special disk format which means that a standard AmigaDOS copy command *will not work!* That's the bad news.

The good news is that you can copy across all other programs in the disk, just by dragging their icons.

I'm telling you this just so you don't ring up the editorial offices complaining that you can't copy the disk, OK?

CURSOR was written in AmigaBASIC and was compiled with itself. It is Copyright ©1990 Jürgen Forster. The library and small pieces of the program were written in assembler and compiled using A68k from Charlie Gibbs and BLink from the Software Distillery.

This program is freeware, which means you may use it and give it to any your friends, but you are not allowed to sell it except for a small copying fee.

Please send bug reports, suggestions for improvements, or anything else to: Jürgen Forster, Lintheide 9, 4800 Bielefeld 17, West Germany.

If he gets enough feedback from you Jürgen may well implement the few commands and functions Cursor does not yet support.



# Earn up to £1,000!

WE are always looking for original contributions for the *Amiga Computing* cover disk. If you think something you have written is good enough to share with everybody else who reads the magazine, send it along and we'll have a look.

If we like what we see, it could earn you up to £1,000.

Please let us know which files, if any, your submission needs from the Workbench disk. If it is clickable, feel free to design an original icon. But don't make it too large. And please use the standard Workbench colours.

Bear in mind that a program which does not run on a 512k machine would have to be exceptionally good to make it on to the disk.

*Amiga Computing* will buy your work

on an all rights basis. We are not prepared to pay for programs which are already in the public domain or have been spread by other means. However we are quite prepared to launch your program into the public domain as either freeware or shareware if that is what you wish.

Please enclose this coupon, or a photocopy of it, with your submission. Include a file on the disk with full documentation, your name, address, phone number and a few details about you and your kit. A photograph of yourself would be nice, but isn't essential.

Don't forget to duplicate on the disk label the program name, your name, address and phone number. If you want your disk back, enclose a self-addressed, stamped envelope.

Name .....Age.....years

Address .....

.....

Daytime phone.....After .....am

Evening phone .....After ..... pm

Submission name .....

Submission size .....bytes in total

We will accept submissions up to 500k in total length, including documentation. But the shorter your submission, the better chance it stands of getting on to the disk. If it is a compiled or assembled program include all the source code, but do not count this in the size of the submission. Write a brief description of your submission below. If it consists of more than one file, describe what each file is for. Attach an extra sheet of paper to this form if necessary:

.....  
.....  
.....  
.....  
.....

#### Sign this declaration:

The stuff on this disk is mine. I didn't nick it off someone else. It hasn't been published before and I haven't submitted it elsewhere because I want *Amiga Computing* to publish it.

Signed ..... Date.....

Post your submission to: Amiga Computing, Cover Disk Submissions, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP







**J**ODRELL Bank is *the* place to be if you're into radio astronomy. I went there, just off the M6 at junction 18, as a visiting student partly because I was interested in the image processing that's involved in making all those pretty, false-colour piccies that Patrick Moore gets so excited about.

"Basically, we run a VAX cluster", said Paul Harrison as we walked into the terminal room, "but there's all sorts of other machines tied into it. We've got terminals left over from Systime days. About half are text only, most are monochrome. Over here are our two graphics work stations...."

I missed what he said next, because over on the bench, looking battered and well worn, was the familiar form of a lowly A500, and sitting next to it was a huge 1024 pixels by 740 Ikon monitor with a false-colour Quasar on its screen.

Both light and radio waves form part of the electromagnetic spectrum, differing only in their wavelength and frequency. With the naked eye, we can see only in the "optical" wavelengths, though many insects can see in ultra-violet and infra-red.

Going up in frequency (and down in wavelength) from the visible you have ultra-violet rays, X-rays and Gamma rays. Going down in frequency (and up in wavelength) you get radio waves.

The advantage of looking at things in the radio wavelengths is that the waves pass more easily through dust than light, making objects easier to detect. You can also tell what atoms make up the object, and basically "see" in greater detail than with optical telescopes.

Enough of all that. You want to know about computers, so I'll tell you about computers. Like all science in this country, Jodrell is incredibly under-funded. As a result they work to an "if it works keep it" philosophy.

**T**HAT means that the main telescope (Mk 1a) is still used with the original 1955 analogue computer, though the hard work is now done with a digital machine. But it works: The motors driving the dials on the front have to be replaced more often than the valves that glow away to themselves in the heart of the machine.

In those days astronomy was a

graph paper and ruler affair. Nowadays most astronomers would give up without at least a Vax to work with.

Why the change? Well the bigger the telescope, the finer the resolution. To the Mk 1a, the quasar I first saw was nothing but a point. And that telescope is just about as big as you can get – even so gravity stretches the telescope bowl enough to affect its performance.

The way to get round this is to tie two telescopes together using a

technique called Interferometry to simulate a telescope as wide as the "base line" – the distance between them.

Before computers came along you couldn't use more than two telescopes to do this, and even then the results would be meaningless to me and you.

In Britain we have a Interferometer stretching (by the time of publication) from Cambridge to West of Jodrell. This simulates a telescope hundreds of kilometers across. The network is called Merlin (it really does stand for something) and I've been told that the Mk 1a controlling computer is called Arthur because it's Merlin's friend. I think the real reason has something to do with *The Hitch-hiker's Guide To The Galaxy*...

When Merlin was designed in the mid '70s there were no suitable computers in the world to control all the telescopes and bring the data together. So Jodrell built their own, called Circes.

They have no proper microprocessors – the CPU is a circuit board, not a chip. The most complicated component on it is an adding chip. You enter a

program by selecting an address on finger-wheels, and then flicking in the binary on a bank of switches. The control program was written in Forth and then compiled.

The Micro-Circes are still in place, the only change being to replace the paper-tape reader with eeproms. Each out-station (remote telescope) is controlled by a Micro-Circe which takes commands from Jodrell. The received signal from the telescope is sent back via a microwave link, cooled as near to absolute zero as possible to avoid adding noise.

**N**OISE is important. Often you're looking for a signal that's 10,000 times weaker than the background noise. This is where the first piece of really clever hardware comes in (these telescopes are just souped-up radios).

A new version is being built to accommodate the latest telescope, at Cambridge, add extra channels, and improve the data by about 20 per cent. It works like this:

The analogue signal is converted into a two bit binary number between

# Earth calling Cheshire



*As Jodrell Bank has been keeping an eye on the universe, an Amiga has been keeping an eye on it.*  
**Joe Garner**  
*investigates how an A500 has become an interstellar graphics terminal*





0 and 3. The signal then passes on to a bank of 128 custom chips under the control of a 68010. Slightly different signals are combined once in each chip, read out by the 68010, recombined into a single value and stored in delay memory.

Each combination of two telescopes has a board like this, and the signals from each board must arrive at the same time. Some telescopes are nearer to Jodrell than others, and so signals which arrive at the same time at each telescope arrive at different times back at Jodrell.

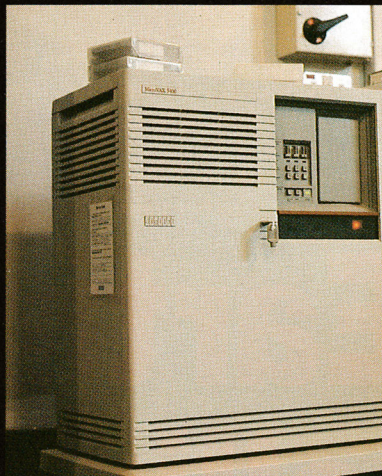
All this is synchronised by a master 68010 board that collects all the signals in step and stores it in ram until it's needed. The reason this process is so clever is that because noise is random and the true signal is constant, by combining the signal lots of times, the random noise will cancel itself out.

On average, pure random noise will fluctuate evenly between positive and negative limits, so that if you take enough samples it will add up to zero.

As a result you remove noise and amplify the required signal. The two bit number does not affect the final value because, again, the average signal strength will be a multi-bit number.

To see what I mean, here's a very

*The Amiga makes  
the other equipment  
look over priced*



*Hi there! My name  
is Eddie and I just  
know we're going  
to get on fine...*

over-simplified for instance. Imagine you were timing how long it took a stone to drop 22.5 metres and it took 1.5 seconds. Fine, but what if your clock could only measure 1 or 2 seconds?

Well if you took lots and lots of readings, after a while 50 per cent would be 1 and 50 per cent would be 2, which averages out at 1.5. If you still don't get it, don't worry: The guy who's building the thing doesn't quite

know what's going on either. Just remember, there are about thirty 68010s running in parallel there, so it must be good.

The results are read out by another Circe, which is due for replacement by a VAX in a month or so. This first stage is about 94 to 98 per cent efficient. The data is usually dumped on to mag tape before processing.

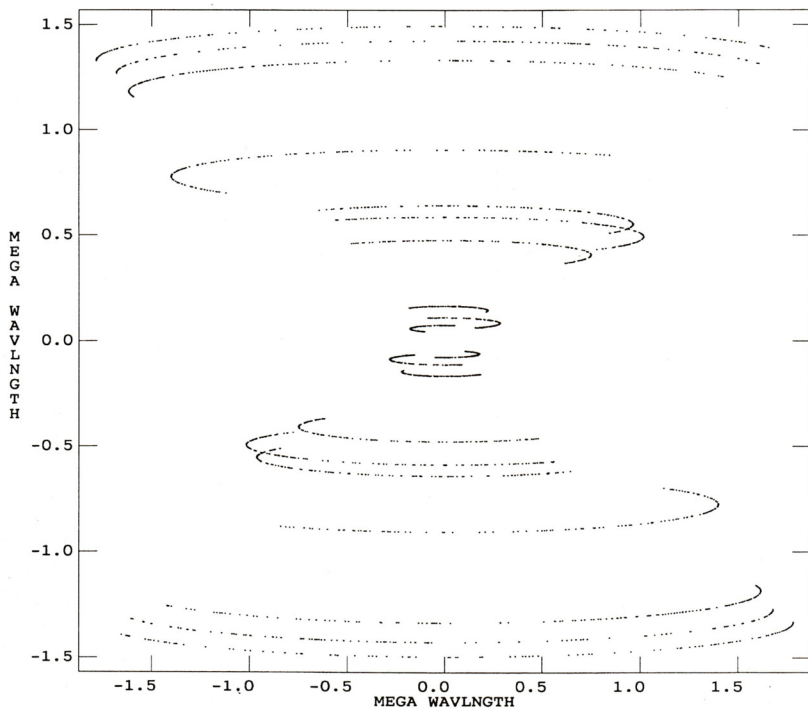
**I**N 1977 everything was run from two telexes and two terminals on a phone link to Manchester. Data was erased whenever disk space was needed, there were no graphics terminals and everyone was tearing their hair out and jumping up and down.

Then came a Systime minicomputer-cum-mainframe. A little later it was replaced by a VAX that took up a decent room-sized room. That was replaced by a VAX 3400 mainframe the size of a couple of suitcases. Now the VAX cluster contains half a dozen machines. On-line disk space is over 2500 Mb.

Storage is on disk, hard disk, video disk, video tape and mag tape for transportability. On-line VAX memory is around 200 Mb.

Before I go on about the hardware any more, I'll tell you what it needs to do. The swirly graph is a picture of the track each telescope pair traces across the sky (the receiving areas of each telescope are just overlapped on the same area of sky, so that the

PLOT FILE VERSION 1 CREATED 08-AUG-1990 14:00:29  
V VS U FOR 3C120-MERLIN.VCALXY.1  
ANTENNAS \*\* - \*\* CORR LL



*This is the  
raw data  
from the  
telescopes.  
After  
cleaning-up  
it looks a  
lot prettier*



source is trapped in the overlap).

The first job is to fill in all the blank spaces in the data. You do that by working out the way the signal is changing and use that rule to guess the value in between two known values by fitting a smooth line to the scatter-graph of readings.

Even so the picture that comes out looks horrible. This is because of the errors introduced by the inherent nature of the technique and the instruments involved. This is just like, if you squint at a light bulb, you see lines of light appear. Or, on film, a bright light may be surrounded by concentric rings.

Any radio source will appear to be surrounded by such rings. When there are hundreds of points in the picture you can imagine the mess it makes! Luckily you can predict how this will happen and then remove the mess to produce a clean image.

**T**HREE or four years ago there was nowhere to put that clean image so that it looked pretty. So when Jodrell bought a new Alliant FX8 mini-supercomputer to cope with the number crunching they also bought an Amiga as a "crude graphics terminal" – thanks for the compliment, Dave.

Incidentally, the Alliant uses 68010/20s for I/O control and terminal handling, and the four main parallel processors use a very

## A DOS by any other name

**A**MIGADOS is quite a nice DOS, despite the bugs. It's not till you use big machines like the ones at Jodrell that you realise why AmigaDOS is so polished. To put it nicely (and not get sued) AmigaDOS is a Unixclone. The Amiga's CLI is like UNIX's VMS. You find yourself trying to use CLI commands when you shouldn't.

Unix is *the* operating system used by university and scientific computers. It was developed in a university in the USA several years ago (mainly in C), and is used by just about everyone. Which is, incidentally, why a worm

virus brought down a lot of Internet in the US a couple of years ago. Internet contains, among others, Milnet, ARPAnet (Pentagon networks) and NASA networks.

So where does Workbench come from? Well, just boot up a Sun workstation and you'll see. The whole concept and layout is so similar it's incredible. In fact I think Amiga window handling is more friendly.

I guess that's not too suprising, seeing how – as folklore will have it – Amiga software was being developed and emulated on Suns before the first pre-production A1000 was completed.

extended 68020 instruction set, making it the one of the fastest running computers to use a 68000 set.

The Alliant logs on under the name Zaphod (because it has four brains) and the A500 talks to it and the VAX cluster, all sharing disk space. The graphics terminal emulator ran only in 32 colours, which was odd considering that the palettes used are perfect for HAM.

On the other hand, as Dave says, it would have been nice, but they needed something straight away, and it was pointless spending any time developing software, seeing the way they expected to go hardwarewise.

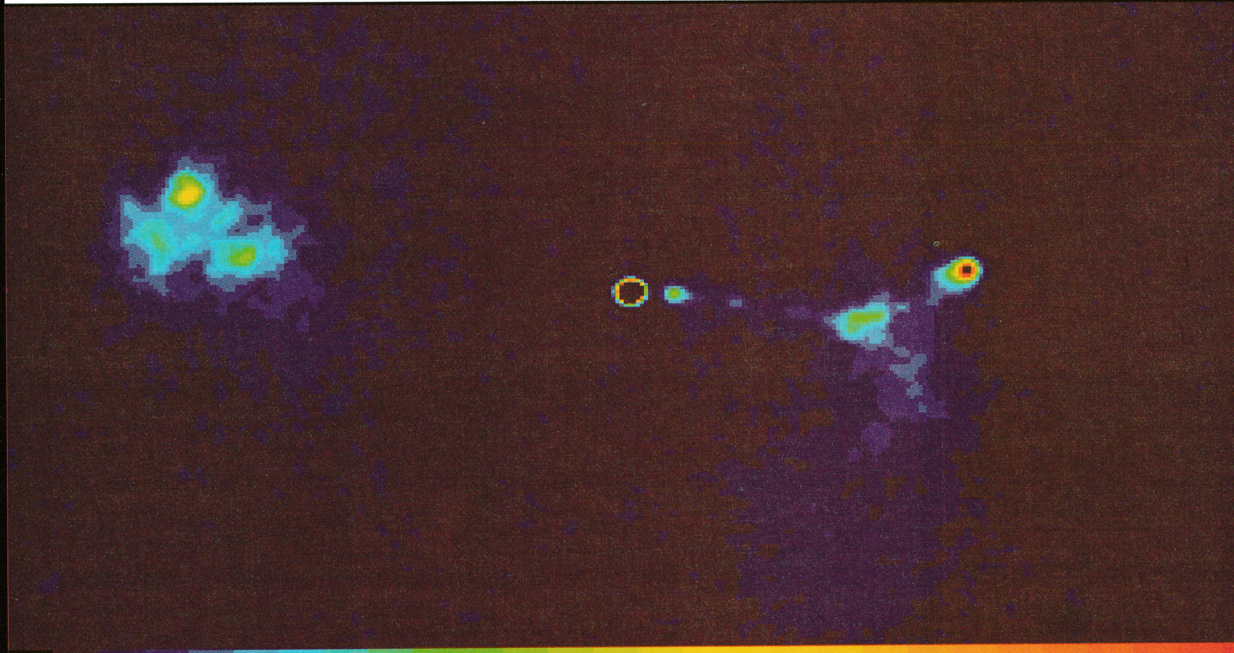
Looking around, I kind of see what

he means. Now the Amiga is used as the intelligent end of a two-piece graphics workstation. The other end is a high definition, 256 colour, Ikon monitor with a microprocessor thrown in as an afterthought.

So the pictures made from radio waves that had been travelling since before life on Earth began were shown on an A500. So next time you play Elite or Battle Squadron, just think, the Amiga that was next to yours in the warehouse might just be the one that's *really* been there and back!

Many thanks to Dave Shone, Tom Muxlow, Jean Warren and Paul Harrison for making this article possible.

## Personal Astronomical Work Station



After extensive processing, the quasar can be represented as a false colour image like this. Note familiar window icons!



# KAD-SOFT UK

BRITAIN'S FASTEST GROWING AMIGA PD LIBRARY

KA1 - The Business Collection, Editor, Spreadsheet & Database  
 KA2 - The Wordprocessor for the Amiga  
 KA3 - C-Compiler Assembler & Linker  
 KA4 - RIM the brilliant Database Program  
 KA5 - Disk Doctor Collection  
 KA6 - CLI Help. Worried by CLI? This one will make everything clear.  
 KA7 - A Collection of brilliant arcade games.  
 KA8 - Predators Mega Demo. Brilliant twin disk demo.  
 KA9 - Break our construction set  
 KA10 - Nightmare on Elm Street Demo  
 KA11 - North Star and Silent Demo  
 KA12 - Star Trek Modulator 2 Game  
 KA13 - Deluxe Music. A collection of instruments for the original program  
 KA14 - Magnetic Fields Demo. The Ultimate Bobs & Sprites Demo  
 KA15 - Robocop Demo. Brilliant  
 KA16 - Star Trek The Next Generation. 1 Meg shareware version  
 KA17 - Space Ace demo  
 KA18 - The North Star Mega Demo  
 KA19 - Cool Cougar Demo. Cartoon quality  
 KA20 - Virus Killer  
 KA21 - The Anti-ST Demo Disk  
 KA22 - The Miami Vice demo. Digitized sounds  
 KA23 - Kylie Minogue Demo disk 1  
 KA24 - Kylie Minogue Demo disk 2. Needs KA23 to run.  
 KA25 - Larn version 12. Brilliant Dungeons and Dragons game.

KA26 - Shanghai. Playable demo of great game.  
 KA27 - Utilities collection 1. Quick copy, P copy, Dir Master, Funckery, Blitz, Virus X  
 KA28 - Games Collection 1, Cribbage, Tiles, Bullrun, Tic Tac Toe.  
 KA29 - Games Collection 2, Amoeba, Yelp, Rock Slide, Egyptian Run.  
 KA30 - Bankn, Home Help, Home Finance Packages.  
 KA31 - Elvira Brilliant Demo  
 KA32 - RAF Mega Demo. Brilliant 2 disc demo  
 KA34 - North Star & Fair Light Mega Demo 3 brilliant 2 disc demo  
 KA35 - Deaths Star Mega Demo - Yet another great twin disc demo  
 KA36 - Fractal Flight. Brilliant fractal demo  
 KA37 - V12 Slideshow  
 KA38 - V12 Games Collection. 3 Disks  
 KA39 - Holy Grail Adventure. Brilliant text adventure. 1 Meg required  
 KA40 - Star Trek. The new version as recently reviewed - 2 disks  
 KA41 - Coma Demo. The brilliant demo

**All discs - £2.50 on P&P  
 Ring for FREE Catalogue  
 2 Disks FREE with every  
 10 ordered**

**We stock the complete range of Fish, Amicus, Slip Disk, T-Bag and Panorama Disk Collections**

## DISKS

3.5" 135 tpi DD/DS Disks Unbranded (KAO, Sony)  
 100% error free. Certified very high quality will format to 880k easily.

	10	25	50	100	200
	£6.80	£13.80	£26.00	£52.00	£92.00

All prices include P&P, Labels  
 No quibble Money Back Guarantee

	10	25	50	100	200
80 cap	£12.25	£18.00	£32.50	£53.50	£95.00
100 cap	£13.80	£18.75	£33.90	£54.80	£97.00
120 cap	£14.50	£19.40	£35.00	£55.90	£98.95



Open 8am - 10.30pm - 7 days a week

OVERSEAS ORDERS  
 PLEASE ADD £1.25



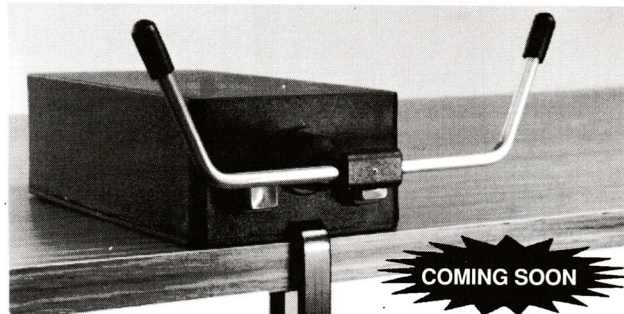
Send Cheques & P/O's payable to

**KAD-SOFT, 2 EBOR PADDOCK, CALNE, WILTS. SN11 0JY**

**TEL: 0249 817174**

## ACCESSORIES

Disk Boxes  
 80 cap - £6.75  
 100 cap - £7.75  
 120 cap - £8.75  
 Banx Boxes in stock - £11.00  
 Mouse Mats - £3.75  
 Mouse Holders - £3.75  
 Amiga Dust Covers - £4.50  
 A500 1/2 Meg Upgrade - £48.00



**COMING SOON**

**DELTABASE A -**  
 Analogue Yoke joystick for Flight SimII. Similar to a light aircraft control it rocks from side to side for aileron movement and slides in and out for elevator controls. £29.95

**MICROPROSE F-19 STEALTHFIGHTER**  
 with analogue joystick control. This will use the Delta 3A Joystick.

A light action analogue joystick with fire buttons. There's bound to be a rush for this Joystick as software becomes available, so get your order in now.  
 DELTA 3A Joystick £14.95.

**DELTA 3S -** Switched joystick, very light, easily hand held. £14.95

**AMI-CAT -** Mouse eliminator, joystick. £29.95.

## SIMULATOR SOFTWARE

Sublogic Flight Sim II. £27.95

Scenery Discs. £14.95

7 Washington; 9 Cincinnati; 11 Detroit; Western European;

Hawaiian Odyssey

Jet £27.95

## VOLTMACE

Unit 9, Bondor Business Centre, London Road, Baldock, SG7 6HP

Telephone 0462 894410

Prices include VAT & 1st class post  
 Dealer & Distributor terms available



0530 411485

# ASHCOM



0530 411485

**YOU NEED 512K NOW  
 HOW MUCH WILL YOU NEED  
 TOMORROW?**

THE NEW ASHCOM RAM EXPANSION IS EXPANDABLE  
 TO **1.8Mb**  
 GIVING YOU 2.3Mb OF SYSTEM RAM

8372A  
 FATTER AGNUS  
 £59.00

1.3 KICKSTART  
 ROM  
 £28.00

## FEATURES:

- ★ Real Time clock/calendar with high capacity Nicad battery backup
  - ★ Memory disable switch
  - ★ Low power consumption
  - ★ Buffered Data Bus (Essential for high capacity Ram boards)
  - ★ Plugs in as A501 NO SOLDERING!!!
  - ★ 12 Months warranty
  - ★ Configures to 1 Mb chip ram when FATTER AGNUS is enabled
- All prices include VAT and delivery.

**ONLY £59.95 for 512K version.**

**Expander Board £15.95.**

**Expanded to 1Mb £99.95**

**Expanded to 1.5Mb £128.95**

**Fully expanded to 1.8Mb only £154.95**

**ASHCOM 512K RAM EXPANSION WITH REAL  
 TIME CLOCK/CALENDAR AND DISABLE SWITCH  
 ONLY £39.50**

**WITHOUT CLOCK £34.50**

**Gives 1Mb chip RAM with Fatter Agnus**

## READ THIS

**FREE REGISTRATION WITH THE  
 ASHCOM USER CLUB**

Fill in the coupon below to register with the Ashcom User Club and receive exclusive information on new Ashcom products. With each free mailshot you will receive a massive 10% discount voucher.

10% discount off any order received with registration. No more endless sifting through adverts for a good deal.

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Postcode \_\_\_\_\_

No obligation to order when registering

## Rams

**only  
 £30  
 per  
 512K**

**NEW NEW NEW NEW NEW NEW NEW**

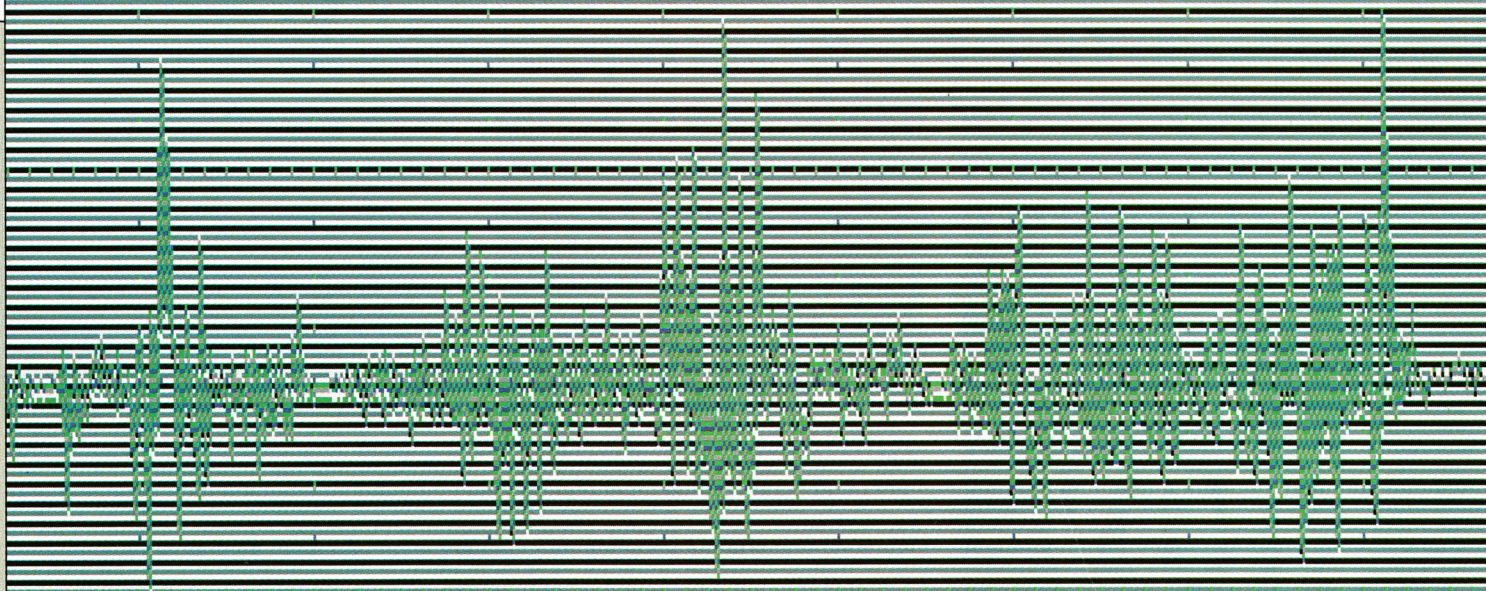
**BOOT SELECTOR  
 WITH ANTI CLICK  
 ONLY £19.95**

Selects DFO or DFI as boot drive and eliminates that annoying click when drive is empty.  
 Easy to fit - just plug in!!

**Only from ASHCOM, 10 The Green, Ashby-De-La-Zouch, Leicestershire, LE6 5JU**  
**Telephone: (0530) 411485 Fax: (0530) 414433**

MON-FRI  
 9.30-5.30  
 SAT 9.30-4.00





# The Sample facts

SOUND is a wonderful thing. Although it's nothing more than a consequence of living in an atmosphere which can transmit pressure waves, it forms an integral part of our lives.

So starts the typical physics school book on the subject of sound. Of course, all Amiga owners have to do is put a game in their disk drive, turn up the volume and instantly they know

*Listen very carefully?  
Can you hear it?  
It's your Amiga.  
It wants to make  
some strange noises,  
and only you can  
help it*

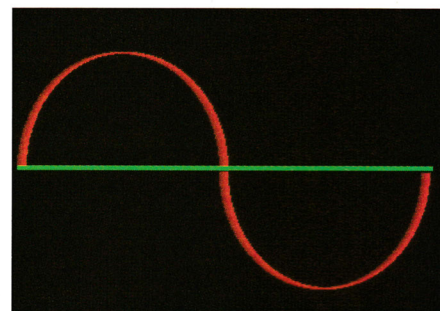
all they need to about sound. It's good. It's loud. And it's easy to use. All you need is a sampler and some software: The Amiga's sound chipperly will do the rest. There are several things you can do with your sound samples, but the most important thing is to have fun. There is something immensely satisfying about sampling your voice and replaying it backwards at half the normal frequency.





# How they work

*Here is a simple explanation of how samplers work, and why different sample rates make a difference to the overall quality of the sound. For a more detailed look at sampling in general, you should consult one of the many text books available. The bad news is that most of them are beyond A Level, so prepare for some nasty maths*



*The nice picture above is a representation of a sound, in this case a simple sine wave. It's the sort of thing you would see if you connected a microphone to an oscilloscope and played a note on a flute. Believe me, it is. It is a purely analogue – constantly varying – waveform, and there is no way that an Amiga could ever start to make sense of it.*

*Before you can start to play with this sound, you'll need to convert it into a digital form. To do this, you need a digitiser, otherwise known as a sampler.*

## How to use them

USING your sampler to best effect depends on three things:

- The quality of the sampler. It might seem an obvious point, but be careful – price isn't necessarily a good guide. Check the reviews in this issue.
- The quality of the software. All sampling software is *not* the same. By upgrading your software, you could drastically improve your samples. Some software will work at extremely high sample rates, which means users with accelerator cards can sample in stereo at rates of up to 56Khz. This is better than most CD players, so the results will be stunning. (Note: CD players operate at 16 bit resolution, so at the moment you can't sample better

than a CD. Pay attention though, for the statement *at the moment* is likely to change in the very near future.)

- The quality of the input signal. If you record all your samples by yelling into a cheap microphone, then you can't expect them to be top notch. Best samples come from CD players, as usually the input levels are just right and of course, you don't have any pops or crackles to contend with.

### *What do I do now?*

ONCE you have your sample captured on disk, you can start to have some fun.

When you get tired of making silly

voices, you can load them into a sound processing package (such as TEM on last month's cover disk) and perform all sorts of nasty transformations on them.

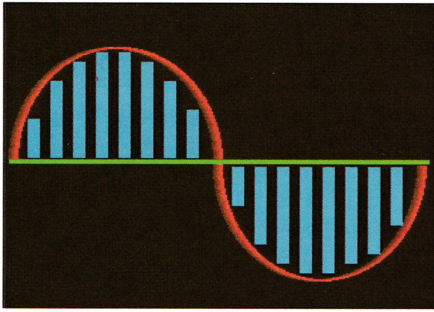
When the sample is exactly how you want it to be, you can start to make use of it. The easiest way is to load it into a SoundTracker clone such as MED and compose a few tunes with it.

The more adventurous amongst you can incorporate the sound effects into your own programs. Haven't you always wanted to say "Game Over" at the end of your own game?

#### Reviewers:

Andrew Banner – Budget samplers  
Jason Holborn – Audio Engineer

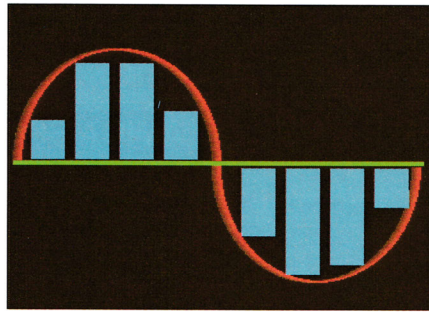




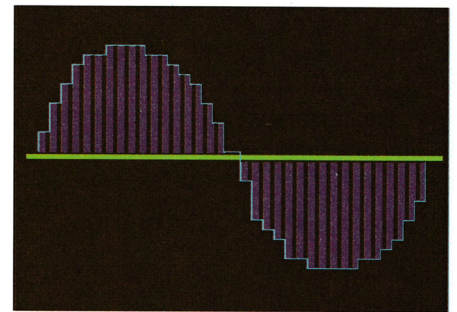
The pretty blue boxes indicate the guesses (more scientifically known as samples) which the digitising hardware has made at certain points on the waveform.

It can only work to a defined resolution, which is why the points are not entirely accurate. For example, if the Amiga worked with a 16 bit resolution instead of an 8 bit resolution, the boxes would be placed twice as accurately.

However, 8 bit samples can still sound pretty darn good, so let's not start complaining.



Now we come to the meaning of the sample rate. In this example, the boxes are a lot thicker: the sample rate has been reduced. There are less samples, and even though they are just as accurate as the previous ones when it comes to guessing the level, the fact that there are less means the Amiga has less information with which to construct its one version of the waveform. The less information the Amiga has, the more awful the sample will sound. From this it shouldn't be hard to work out that the more samples per waveform the better.



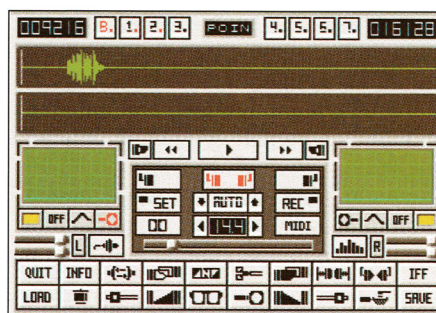
The piece de la resistance: the Amiga generated version of the waveform. This one was constructed using a fairly high sample rate, but you can still see that the waveform is no longer nice and smooth – it now has "steps". The more samples taken, the smaller the steps, the closer the sound to the original. Mathematicians amongst you will be overjoyed to learn that Shannon's Sampling Theorem states that to digitise a given waveform, you need to sample it at a frequency of at least twice that of the original waveform. Non-mathematicians won't care.

## A.M.A.S.

**A**DVANCED Midi Amiga Sampler is the product of the relationship between Microdeal and the UK's premier sample masters, 2-Bit Systems.

The hardware comprises of a full 8-bit stereo sampler as do most of the other units, but what makes A.M.A.S. unique is the built-in MIDI interface. Although MIDI interfaces for the Amiga can be picked up for about £20, it's a bonus having it built-in to the sampler as you can use it in conjunction with the sample editing software. More about this later.

The software is supplied all-in-one, that is to say that one program performs all the functions that are available. It uses a series of icons for operation and these are arranged in the lower area of the screen. Basic sample record and playback controls



are located in the centre of the screen and use the kind of symbols you would find on a tape deck so that initial operation is straight forward.

Samples are displayed in standard form along the top of the screen. Two sample windows are used in A.M.A.S., one for each stereo channel with each channel being selectable so that you can operate on it independently of the other. Alternatively, you can opt to work on both channels simultaneously.

Most of the functions, except for disk operations, are stored on

"buttons" with icons upon them. My complaint here is that although some of the icons are easily recognisable and relate to the function – the fade in and filter symbols for example – others do not immediately ring a bell and so a fair bit of memory work and manual reference is required.

Although the hardware is capable of sampling up to 40kHz in stereo and 90kHz in mono, the software will only sample up to 25kHz in stereo (28kHz mono) but is capable of playing back at 28kHz. The sound quality of these samples is very good, but at 25kHz, memory is precious and this sample speed is only really suitable for short sound effects or for people with an 8Mb Amiga.

The MIDI connections to the sampler are via standard DIN type plugs and sockets while audio input can be achieved with two Phono type connections or a 3.5mm jack plug at line level for direct microphone input.





## AMIGA SPECIALS

## AMIGA SPECIALS

## AMIGA SPECIALS

## AMIGA SPECIALS

THE CYCLES £8.99	BALANCE OF POWER £9.99
LEISURE SUIT LARRY II £16.99	
DEJA VU £8.99	BLOOD MONEY £7.99
HUNT FOR RED OCTOBER £9.99	
CARRIER COMMAND £7.99	FALCON £9.99
INTER. CHAMP WRESTLING £8.99	
BARBARIAN 2 £6.99	SHUFFLEPUCK CAFE £7.99
DYNAMITE DUX £7.99	
DUNGEON MASTER 1M £9.99	ALTERED BEAST £7.99
MILLENNIUM 2.2 £4.99	
3D POOL £8.99	SONIC BOOM £6.99
COMMANDO £7.99	
R-TYPE. £7.99	LAST NINJA 2 £7.99
AFTERBURNER £7.99	
ARKANOID 2 £7.99	TRACK SUIT MANAGER £6.99

CORPORATION .....	16.50
TIME MACHINE .....	16.50
BATTLE MASTER .....	16.75
MURDER.....	16.75
BACK TO THE FUTURE II.....	16.75
THEIR FINEST HOUR .....	18.99
FLOOD.....	16.50
SIM CITY.....	18.99
POWERMONGER .....	16.99
F19 STEALTH .....	18.99
MIDWINTER.....	18.99
DAMOCLES .....	16.50
SHADOW WARRIORS.....	14.99
MIDNIGHT RESISTANCE.....	14.99
SUBBUTEO.....	16.99
DAYS OF THUNDER .....	16.99
OFF ROAD RACER.....	16.99
BATTLE COMMAND .....	16.99
NEW YORK WARRIORS.....	13.99
RICK DANGEROUS II .....	16.99
OPERATION STEALTH.....	16.99
APPRENTICE.....	13.99
SIMULCRA.....	16.99
CADAVER.....	16.99
MR DO RUN RUN.....	10.99
SPELLBOUND .....	16.99
TORVAK THE WARRIOR .....	16.99
SHADOW OF THE BEAST II.....	24.99
EDITION 1 .....	18.99
UMS II.....	19.99
NIGHT BREED (ARCADE).....	13.99
LOOM.....	18.99

PIONEER PLAGUE £1.99	MR HELI £9.99
STUNT CAR RACER £8.99	
HONDA RVF £8.99	FAERY TALE ADVENTURE £7.99
FLIGHT PATH 737 £4.99	
CHRONO-QUEST 2 £9.99	THEME PARK MYSTERY £8.99
SHADOW OF BEAST £9.99	
GRAVITY £8.99	CABAL £9.99
UNTOUCHABLES £9.99	
XENON 2 £9.99	VIRUS £4.99
DELUXE PAINT 2 £9.99	
TOWER OF BABEL £7.99	IK+ £3.99
BLOODWYCH £9.99	
JUMP JET £4.99	SUPER HANG ON £7.99
FLYING SHARK £6.99	
FAST BREAK £4.99	BLASTEROIDS £1.99

NINJA TURTLES.....	16.99
GREMLINS 2.....	16.99
THE SPY WHO LOVED ME .....	16.99
ROGUE TROOPER .....	16.99
ROBOCOP 2 .....	16.99
WINGS (1 MEG) .....	19.99
BACK TO THE FUTURE II.....	16.99
PIRATES.....	16.99
POOLS OF RADIANCE .....	19.99
CODE NAME ICEMAN.....	27.95
BOMBER BOB .....	14.99
WELLTRIS.....	14.99
NIGHTBREED (MOVIE).....	13.99
INTERNATIONAL 3D TENNIS .....	16.99
TERRORPODS.....	2.99
THUNDERBIRDS .....	4.99
SECONDS OUT .....	4.99
ULTIMATE DARTS .....	7.99
TERRY'S BIG ADVENTURE .....	4.99
LEATHER GODDESS.....	6.99
INFESTATION .....	8.99
WEIRD DREAMS.....	8.99
KENNY DALGLISH MATCH.....	8.99
PHANTOM FIGHTER.....	4.99
STAR WARS.....	4.99
NEW ZEALAND STORY .....	8.99
NEVERMIND .....	4.99
RETURN TO ATLANTIS .....	4.99
PACLAND .....	4.99
MURDER IN VENICE .....	5.99
GOLDRUNNER 2 .....	1.99
CONFLICT EUROPE.....	4.99
STARFLIGHT .....	16.99

PLEASE NOTE: ALL GAMES ARE NEW AND ORIGINAL, AND MANY ARE LIMITED QUANTITIES. PLEASE BE QUICK!

TITLE/ITEM	PRICE
TOTAL COST £:	

Name .....

Address.....

.....

.....

Tel No: .....

AMC NOV





A.M.A.S itself connects to the Amiga using two fly leads: One goes to the serial the other to the parallel port.

To obtain the correct audio input levels, the A.M.A.S software includes an oscilloscope display for both left and right channels either side of the record and playback panel on the main screen. These jump to the incoming signal, if the signal is too strong the peaks of the signals will

flatten. A nice touch is the spectrum analyser display which displays the signal in it's frequency form from just 10Hz to 5.5kHz.

The MIDI functions allow A.M.A.S to be connected to a MIDI keyboard so that it may control the software. The software can hold up to 10 samples in memory (providing you've got enough) each of which can be triggered by a certain key on the MIDI synth. The samples can also be triggered from the Amiga's keyboard

and up to two stereo or four mono samples can be played simultaneously.

A.M.A.S is a very good product. It's comprehensive array of features combine to provide a really good sound. Samples are saved using the standard IFF Amiga file format so that they may be loaded and further manipulated with other music software. However, no source code is supplied so that you may includes your samples in your own programs.

## Techno sound

**U**NLESS you're really seriously into sampling and intend to do it for practical applications, I suggest you spend your money on a budget item instead of spending over £50 on something that might turn out to be a five minute wonder. At 30 quid, you can't go far wrong with this well thought out product.

The hardware consists of a small box which plugs directly into the parallel port of the Amiga. Audio input to Techno Sound is via two RCA type Phono sockets on the opposite end to the 25-way D type computer connector. Unlike Mastersound, Techno Sound is a stereo sampler which makes it a very attractive purchase.

The software is the most colourful of the lot and looks very nice. But it matters not how nice it looks, what about it's quality. Thankfully, for the most part, Techno Sound uses buttons that say what they do rather than using symbols which must be recognised. Apart from that, the buttons that do have symbols upon them are large enough to make the diagrams easy to see.

Samples can be recorded at between

5 and 35kHz and a feature unique to Techno Sound allows sound to be recorded in either 8 or 4-bit resolution. The default is 8-bit but 4-bit recording will half the length of samples but also reduce the sound quality. Samples can be made in stereo, mono or simulated stereo which sound inferior to real stereo but saves memory. Samples sound very good, with little only slight hiss.

Files can be stored in IFF or binary format for easy file transfer between software. An interesting function named RAMscan will scan memory for any sample data that may have been left there by programs previously in memory.

Techno Sound is also the only sample in this selection that has any kind of effects menu. Effects can be added in real-time to the incoming audio or to the sample in memory. Effects like echos and reverberations can make Bros sound quite pleasant. The hall effect adds a reverberation to make your sound appear as though it's in a large room or concert hall. Room adds a shorter reverb to the sound to make it appear to be recorded in a smaller enclosure. In real-time mode a



final effect is available. Phaser sweeps through the sound changing tonal values vamping the sound quite dramatically.

The manual supplied with Techno Sound sports just 10 pages and only describes the functions of the software and doesn't really give any ideas on it's use. However, (another first here) the manufacturers have seen fit to include an audio tutorial cassette tape. This contains a good walk through of the software and hardware. I won't say that the recording technique is good, but the guy speaking on the tape is far too close to the microphone and if your going to listen to it through your hifi, turn the bass down!

Techno Sound provides good quality reproduction of the original sound and offers features which are not available on any of the other samplers. The sound quality, to my ears anyway, is certainly equal to that of Pro Sound Designer and Mastersound.

## Mastersound

**M**ASTERSOUND started the budget samplers trend last year when it first appeared. Although it's not a stereo sampler, it's manufacturers claim that it's probably the best selling Amiga sampler in the UK today. It's pretty easy to see why as well.

The hardware is nothing special at



all. In fact it's very limited. The only audio input connector is a mono 3.5mm jack plug. Mastersound connects to the

Amiga in the same way as virtually every other sampler: Via the printer port. It's small plastic case is colour coordinated with the A500 and is finished with a sticker displaying its logo. The reason why Mastersound so popular is its versatile software.

Besides all of the usual obligatory features like record, playback and listen, Mastersound possesses something which no other sampler has: A built-in sequencer. This allows





you to store up to 18 samples in memory (if you've enough free ram). These can be played in any order by pressing the keys that you have assigned so that you may record a sequence and replay it later.

The software is controlled by pointing and clicking with the mouse. If the icons on the buttons in the screen shot look familiar, they should. The icons are exactly the same as those used in A.M.A.S as it's the same group of people behind the product.

As with all sampling hardware, you must achieve the correct input level so that you do not get any clipping at the peaks of the sample. Adjusting the signal input level can be done with the help of a L.E.D style peek level meter. If the signal is high it beats to the red lights towards the top of the scale. The manual suggests that you use the oscilloscope to do this, which is quite reasonable is you happen to have a sine wave generator to produce exactly the same frequency all the time. Seeing as the kind of stuff people usually record are pulsing sounds, this can sometimes be a bit unreliable. Still it's there to be used. In addition a spectrum analyser also aids your perception of the incoming signal.

Mastersound is capable of sampling from between 3.0kHz to 55.9kHz inclusive and has the widest sample range of all the products in this test. Samples in memory can be reversed so that they play backwards, but this is the only effect you can impose upon the sound.

Files can be saved in IFF and IFF instrument formats in one three or five octaves so the sounds can be readily loaded into other popular music packages such as Aegis Sonix. Alternatively, the sample data can be stored in it's purest raw data form however information such as the sample frequency is not stored in raw file mode.

The sounds recorded by Mastersound are of a high quality. Apart from being mono, which really doesn't make a great deal of difference with 8-bit samplers anyway, Mastersound is a really good package. It offers a comprehensive range of features which are unsurpassed at this price. It's ideally suited to someone who wants to dabble, and includes software to enable you to play samples independently of the main editor software.

## Pro Sound Designer Gold

**P**RO Sound Designer is the sloppiest looking unit out of the lot. The hardware is unlabelled and styled in a repulsive grey plastic case. Apart from this, it is poorly designed and sits at right-angles to the Amiga. Because the ports on the A500 are recessed, an extender socket is a must as you can't connect

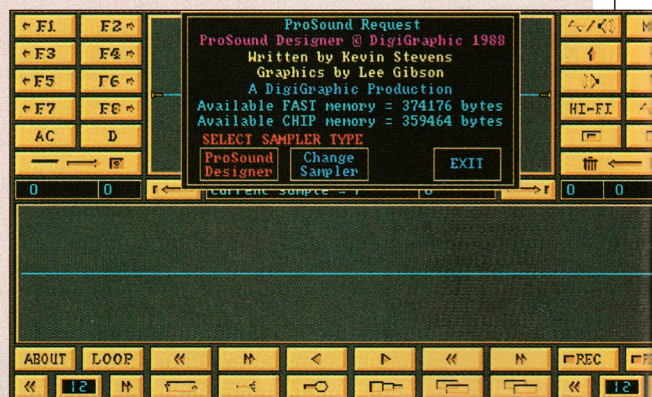
it otherwise. Of course, such an extender is supplied. Audio input is via a 3.5mm stereo jack assembly.

Another complaint I have about the package is the manual. Although it's well written, it's not too informative because of the cost cutting layout technique. The documentation covers too many versions of the product (Pro Sound's available for the ST as well) and though it's not difficult to sort out which bits are relevant to your version, it would be nice to have a manual for each computer rather than one trying to explain the ins and outs of both.

Another point is that it keeps referring to Figure 2 to show which button does what instead of showing the symbol next to the section where it's function is described. Later in the manual this system is employed and it makes operation a lot simpler not having to keep turning back through the manual.

You've probably already realised that, like all the other products in this article, Pro Sound uses the button operation technique using symbols for identity. In fact, I hate these symbols. Many look so similar with only a slight difference so it's all too easy to press the wrong button. However, this is true of all of the products in this round-up.

Pro Sound Designer Gold is a stereo sampler however it cannot display both left and right channels simultaneously – but this is no great loss. The beauty of it is that because the Amiga has four channel sound, Pro Sound allows two stereo samples to play at the same time. If you're clever with the recording system, you can even have four mono samples playing together.



Pro Sound will allow samples to be taken between 1kHz and 28kHz inclusive. Samples at 28kHz sound OK but are not brilliant. Invariably samples taken from a stereo source sound better when recorded in stereo and mono sound better when recorded in mono.

Samples are stored as standard IFF files so that they can be loaded directly into standard software for further sound manipulation. If you prefer you can save the sample in raw format to save space. Basic functions allow you to cut and paste sample chunks with relative ease using the magnify function which give an expanded display of the sample so that cursor positioning is easier. It is possible to double the sample's length which usually increases the signal to noise ratio to provide a better sound. Similarly you can halve the sample using another function which has the opposite effect.

MIDI capabilities are included in the Pro Sound Designer Gold package in the form of a separate program, Pro Midi. However the package does not include a MIDI interface and so more money will have to be spent in obtaining one. Non-MIDI folk can still use this software as you can trigger sounds by pressing assigned keys on the Amiga.

The software includes a variety of sampled instrument sounds which you can sequence together using a MIDI synthesizer or the Amiga's keyboard. Naturally you can sample your own sounds and then use them instead of those supplied.

Pro Sound Designer Gold is a versatile package. I don't think the sound quality is up to that of A.M.A.S but it is a bit cheaper and offers a wide range of features.



## AMIGA A500 SCREEN GEMS

### PACK 1

- A500 WITH 1.3 WORKBENCH
- 512K RAM
- BUILT-IN 3.5" DISK DRIVE
- MOUSE
- TV MODULATOR
- ALL MANUALS & CABLES

### PLUS

- BACK TO THE FUTURE II
- DAYS OF THUNDER
- SHADOW OF THE BEAST II
- KNIGHTBREED
- DELUXE PAINT II

PLUS — unique to TRILOGIC

- FREE TUTORIAL VIDEO
- Shows you how to connect & use your Amiga WORTH £14.99

£369.99

### FREE TUTORIAL VIDEO

This unique Video, produced by us, especially for first time Amiga buyers, takes you through everything from connecting up your Amiga, backing up Workbench, formatting disks, installing 1/2meg expansions & other peripherals + demos of other Trilogic products. Free with any Amiga pack, or available separately for £14.99 + 75p postage.

FREE JOYSTICK  
WITH EVERY  
AMIGA COLLECTED

## AMIGA A500 SCREEN GEMS

### PACK 2

PACK 1 PLUS  
PHILIPS CM8833 COLOUR MONITOR

- 14" SCREEN
- MEDIUM RESOLUTION
- OVER 4096 COLOURS
- RGB & VIDEO INPUTS
- TWIN STEREO SPEAKERS
- STEREO HEADPHONE SOCKET
- GREEN SCREEN SWITCH
- CONNECTING LEAD

£599.99

### ACCESSORIES PACK

- (when purchased with an Amiga)
- 10 SONY DISKS + LABELS IN LIBRARY CASE
  - QUICKJOY II TURBO AUTOFIRE
  - MICROSWITCH JOYSTICK
  - ANTISTATIC DUST COVER
  - QUALITY MOUSE MAT
  - WORTH OVER £33.00

ONLY £19.99

## AMIGA A500 SCREEN GEMS

### PACK 3

PACK 1 PLUS STAR LC 10  
PRINTER & CABLE

£524.99

## AMIGA A500 SCREEN GEMS

### PACK 3C

PACK 1 PLUS STAR LC10 COLOUR  
PRINTER & CABLE

£574.99

## AMIGA A500 SCREEN GEMS

### PACK 4

PACK 1 PLUS CM8833 MONITOR  
STAR LC10  
PRINTER & CABLE

£754.99

FREE  
NEXT DAY  
DELIVERY

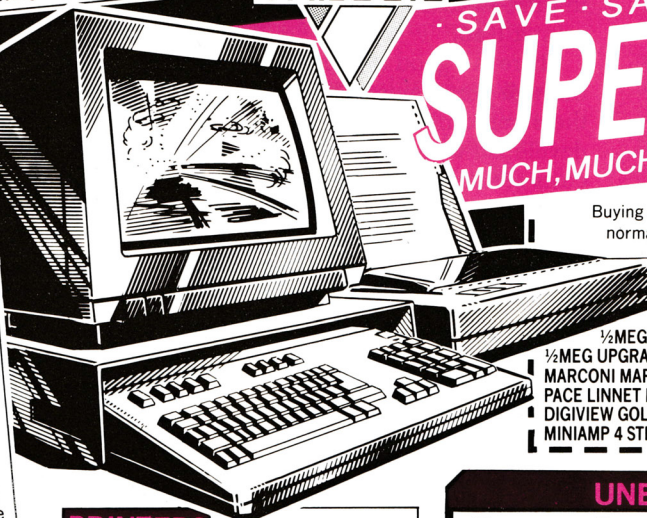
## AMIGA A500 SCREEN GEMS

### PACK 4C

PACK 1 PLUS CM8833 MONITOR  
+ STAR LC10  
COLOUR  
PRINTER

£804.99

SAVE · SAVE  
**AMIGA**



## MONITORS

with free lead

PHILIPS CM8833 £239.99

- 14" SCREEN
- MEDIUM RES. 41mm DOT PITCH
- TWIN STEREO SPEAKERS
- STEREO HEADPHONE SOCKET
- GREEN SCREEN SWITCH
- COMPATIBLE WITH AMIGA, ATARI ST, C64, PC (CGA), VCRs ETC.

COMMODORE 1084S £249.99

Similar spec & picture quality to the 8833, but no green screen switch.

INTERQUAD HIRES £399.99

- 14" SCREEN MULTISYNC
- HIRES. 31mm DOT PITCH
- SWIVEL/TILT BASE
- COMPATIBLE WITH AMIGA, ST (all 3 modes), PC (CGA - VGA)
- FLICKER FIXER COMPATIBLE.
- NO AUDIO - use our Miniamp 4 or 5 stereo systems.

MONITOR PLINTH 1 £24.99

MONITOR PLINTH 2 £32.99

These steel plinths fit over the A500 & have a cut-out for access to the disk drive + holes for mouse & joystick extension + cables (£7.99 extra). Will support any size of tv or monitor. Type 2 has a shelf under the monitor for external disk drives etc.

MONITOR COVERS £6.99

PLEASE STATE MONITOR

## PRINTERS with free lead

STAR LC10 £159.99

9 pin head, 4 fonts, 144cps draft, 36cps NLQ, condensed, double & quadruple sizes, 240dpi graphics, single sheets or continuous paper. Excellent print quality, & uses low cost ribbons.

STAR LC10 COLOUR £209.99

Same spec as LC10, but uses 4 colour ribbon for superb colour text & graphics.

STAR LC24-10 £239.99

24pin head & 8 resident fonts give amazing quality print + upto 360dpi graphics.

CITIZEN 120D+ £144.99

Good budget 9 pin printer. 120cps draft & 24cps NLQ — 2 fonts & 4 print sizes. Single sheets or continuous paper. Low cost ribbons.

SWIFT 24 COLOUR £344.99

Excellent low cost 24pin Colour printer. 160cps draft & 50cps NLQ. Upto 360dpi colour graphics, single sheets & continuous paper. 2yr warranty.

PRINTER DUST COVERS £5.99

PLEASE STATE PRINTER

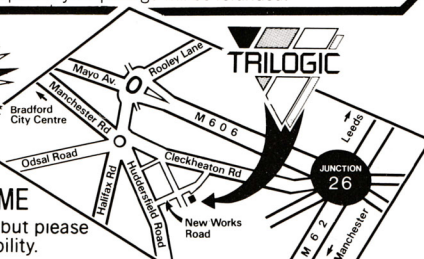
## UNBEATABLE SERVICE

We are renowned for our fast & efficient mail order service, but so that you can have total confidence in purchasing from us, we promise that: Should any computer, printer or monitor prove defective within 30 days of purchase, it will be collected & exchanged for a new one (providing warranty seals are intact).

Thereafter, all repairs will be carried out free of charge under the terms of the manufacturers warranty.

All other faulty items should be returned & will be repaired or replaced free of charge by return of post & your postage will be refunded.

FREE PACK OF PAPER  
WITH EVERY  
PRINTER COLLECTED



## CALLERS WELCOME

Callers are welcome — but please phone to check availability.

## HOW TO ORDER

### ALL PRICES INCLUDE VAT

CARRIAGE. Orders under £15.00 — add 75p postage. Orders over £15.00 are post paid.

Optional Express delivery — add £1.99 for orders under £35.00, £3.50 for orders between £36 & £139 or £6.00 for orders over £139 (Usually next working day — UK mainland only, excluding Scottish Highlands).

### FREE NEXT DAY DELIVERY ON ORDERS OVER £750.00

EXPORTS a speciality — add £1.99 for surface mail or £3.99 for airmail. (Computers, monitors & printers & phone charges.)

### TO ORDER BY MAIL — PROMPT DESPATCH \*

Please tick box next to the items you wish to order, fill in your name, address & postcode & send with your payment by Cheque, POs (payable to TRILOGIC) or c/card number to the address opposite.

### TO ORDER BY PHONE OR FAX — PROMPT DESPATCH

Simply quote your c/card details, name & address & your order & leave the rest to us. You are not charged until the goods are despatched.

## SALES HOTLINE 0274 - 691115

ENQUIRIES 0274-678062

Fax line 0274 - 600150

Please supply the items ticked — totalling

DELIVERY CHARGE IF REQUIRED

I ENCLOSE TOTAL PAYMENT OF

Or please debit my Access or Visa card.

Access/Visa no. / / /

NAME

ADDRESS

POSTCODE

Daytime phone no.

Signed.

Expiry date / /

\*NB For c/card orders, name & address given above must be the cardholder's

Please allow 5 working days for cheque clearance, or add £5.00 for express clearance.

TRILOGIC, Dept. AC,  
Unit 1, 253 New Works Road,  
Bradford, BD12 0QP

## NO HIDDEN EXTRAS

Prices subject to change without notice, but correct at time of going to press. E&OE





## Stereo Sampler MkII

**T**HE Stereo Sampler II is supplied in two forms: With sampling software or without. The software that is sold with Trilogic's second version of it's sampler is Audio Master II from the now defunct Aegis. However, this is an an extra 75 quid.

Now there's absolutely nothing wrong with Audio Master, in fact it's probably the best sampling software about but it's expensive. If you are going to buy Trilogic's sampler, I suggest you pick up some of the basic sampling software from one of the numerous public domain libraries and then use the fabulous TEM from September's cover disk.

When supplied on it's own, Trilogic also give you a disk of commercial demonstration software including Audio Master, Perfect sound and Future Sound. Being demonstration versions, the software is fully featured and operational, there is just no save

facility to store your data. Therefore it allows you to decide which package you would like. Whichever one you choose, if any, you can be sure that it's going to cost you a lot more than PD software.

The hardware itself, life all the others, plugs into the printer port of the Amiga and as such completely disables parallel printing capabilities. Stereo Sampler II overcomes this with an optional add-on. The sampler itself has a through port on the top which connects to this separate unit which, in turn, connects your standard printer lead.

There is a good reason why this through port is possible though. All the other samplers have been developed with software and so the costs are far greater, Stereo Sampler Mk II had not been produced in conjunction with any software engineers and so the costs are,



essentially, low. Because of this, more work has been put into the hardware. This facility allows the sampler to be connected at all times and so saves annoyance in having to fiddle at the back of the Amiga and also saves on wear and tear on the printer port. For the self same reason,

On the top of the sampler is a knob which regulates the input signal strength which comes in via a mono or stereo 3.5mm jack plug on the side. Using the Audio Master demonstration software produces a good, clean sound but Trilogic has left the software option open.

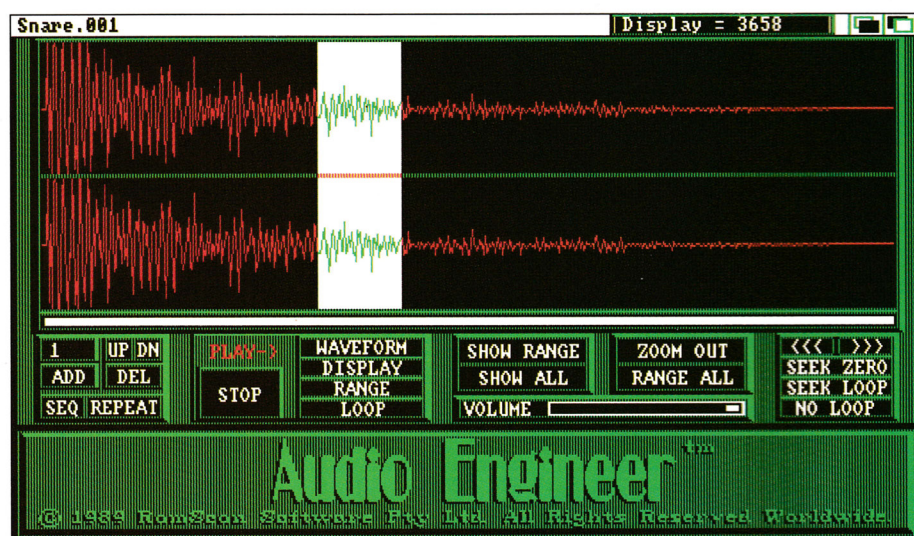
## Audio Engineer Plus

*Open your wallet and say "Help yourself"*

**B**EFORE their unfortunate demise, the US based Aegis Corporation were responsible for many great things. Not only were they one of the few software producers to support the Amiga from its birth, but many of their products still remain some of the best available. Whether you needed a paint package, a desktop presentation system, a video titling program or even a music package, Aegis had something to offer you.

One of the many markets that Aegis managed to conquer was that of sound sampling. Even though their AudioMaster II system didn't even include a sampling cartridge (you'd have to buy that from someone else), it is generally regarded as the king of them all. In terms of sheer sound quality and raw editing power, Audio Master II had no competition.

Although Aegis are now safely under the wing of Oxxi Inc (the people



that brought you the MaxiPlan spreadsheet), AudioMaster II and its creator, Peter Norman, left the company to find a new home. Peter soon resurfaced at an Australian company called RamScan. Soon after, Audio Engineer was born.

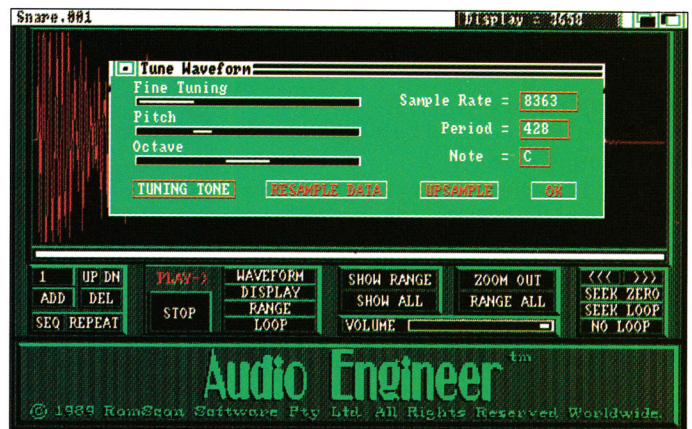
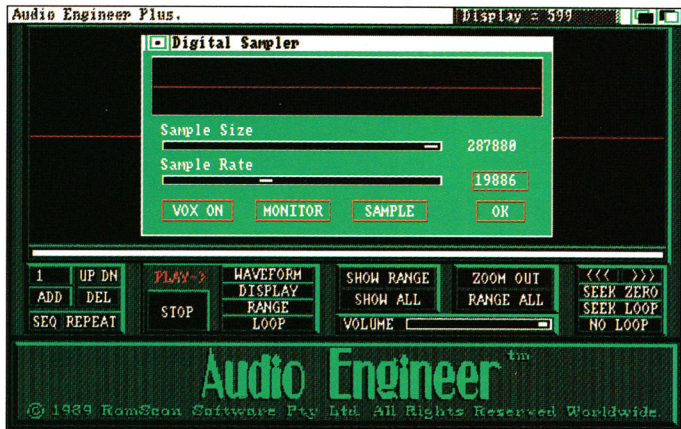
**I**F you've ever used Audio Master II, then Audio Engineer needs no introduction. Just take one look at any of the screen shots within this review and you'll instantly recognise the unmistakable Audio Master II user interface – indeed, if it wasn't for the

name change at the bottom of the screen and a couple of extra icons, you'd never realise that you weren't using Audio Master.

RamScan have decided to make Audio Engineer available in two different configurations. For those of you who already own samplers, the Audio Engineer sampling software is available as a stand alone software package that will happily work with the vast majority of sampling cartridges, including those that use the second control port (such as the Mimetics unit).

Unlike the two previous releases of AudioMaster, RamScan also offer





Audio Engineer complete with a dedicated sampling cartridge designed by G-Soft, a little known Australian hardware manufacturer.

G-Soft's unit, which they call an Audio Imager, is a large box – about the size of an average hard-backed book – which connects to the Amiga parallel port via a ribbon cable. G-Soft designed their sampler specifically to support Audio Engineer's impressive 56 KHz maximum sampling rate. It offers a pair of separate Mic and Line inputs, independant level controllers for the left and right sampling channels and a damned impressive audio bandwidth (100Hz to 50KHz+, for those of you in the know). Not only that, but it even offers a printer pass-thru connector.

Once you've connected everything up, the first thing you'll want to do is to actually sample something. Provided you've got a suitable sound source, Audio Engineer can sample in either mono or stereo. Selecting *Sample* from the pull down menus brings up the sampling requester. From here you can alter the sampling rate (up to a maximum rate of 56 KHz) and the size of the sample to be grabbed. To actually grab a sample, a single mouse click on the *Sample* gadget gets things going.

Amongst the list of new features, Audio Engineer allows you to pause sampling at any point simply by pressing the right mouse button. As soon as you release the mouse button, Audio Engineer then continues sampling. This can be particular useful for excluding sections of a sound during sampling.

UNLIKE some cheaper samplers, Audio Engineer will happily sample into Fast RAM, therefore allowing you to grab incredibly long

samples on a machine equipped with expansion RAM.

Sampling on a 9 Mbyte Amiga, it is actually possible to sample entire tracks into memory.

Obviously, the quality of samples depends heavily upon the quality of the sound source: After all, a chain is only as good as its weakest link. Ideally, it's best to sample directly from a CD player, but even with something like a low-proce personal stereo, you can produce some very exceptable results.

Sampling from a CD source, the combination of Audio Engineer and G-Soft's Audio Imager produced some of the cleanest samples I've ever heard from an Amiga. The samples showed plenty of depth, with sparkling clarity – in some cases, the quality of samples that I was able to obtain could easily compete with some 12 and 16-bit samplers that I've had the displeasure of using!

AS you might expect, Audio Engineer boasts an impressive range of editing tools. Amongst the usual cut, copy and paste operations, Audio Engineer lets you to add echo to samples, allowing you to simulate such effects as reverb quite easily. You can also edit the sample manually by "drawing" the waveform with the *Edit Freehand* option.

This also allows you to create completely new sounds without even having to own a sampler.

You can also mix (combine) waveforms, change their volume, reverse them (naissuR ekil sdnuos syawla ti gniklat enoemos fo elpmas a esrever uoy nehW taht ti si yhw?) Audio Engineer also provides a number of realtime effects such as Echo, Delay and Flange that add the desired effect to an incoming sound

signal and then sends it straight back out again.

One of the most useful tools available is the *Tune Waveform* option which allows you to alter the pitch of a sample. If you're using Audio Engineer to produce samples for your favourite music package, then you'll find the *Tune Waveform* facility to be a true godsend. Like all samplers, the process of tuning relies on the trusty old ears to carry out most of the hard work – by activating a tuning tone, it's then up to you to tune the sample to match.

Potentially the most useful application of sample tuning is the *ReSample Data* option which allows you to convert samples between different sampling rates **without** effecting the pitch or length of playback: Something which even most professional samplers can't do! A large amount of memory can be saved by sampling something at the highest possible rate and then knocking it down to a lower sample rate for playback. In some cases, you gain a better quality final sample by using this technique.

Sample sequencing is nothing new, but Audio Engineer takes it one step further with a new sequencing system that allows complex arrangements to be built up in seconds.

Audio Engineer uses a unique system that works by assigning multiple loops to a single sample. This system works on the theory that most music is constructed from a series of patterns that are repeated over and over again to create the resulting music: Intro, melody, chorus, melody, chorus and so forth. By simply sampling each of these patterns once, you can use multiple loops to give the impression that the entire peice has been sampled. Coupled with Audio Engineer's ability to save samples in a

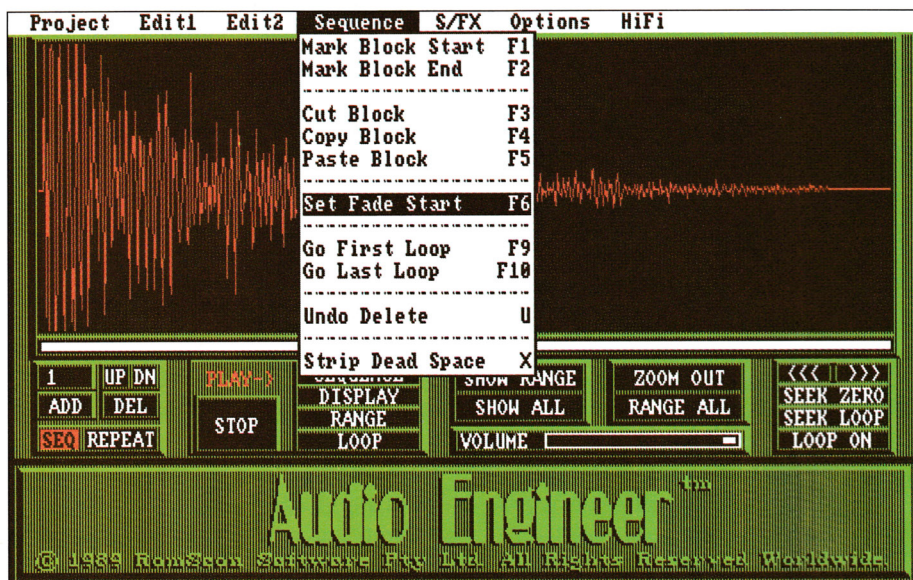


new compressed format, several tracks of sampled music could be stored on a single floppy disk.

Audio Engineer allows you to assign up to 999 of these loops. A fade point can also be assigned so that once a certain point in a sequence has been reached, the sample will then be faded out to silence.

To make the process of finding the perfect loop that bit easier, Audio Engineer will do the job for you with its unique *Seek Loop* option. Seek Loop attempts to find glitch-free loop points by searching for a zero crossover for both the start and end points of the loop. If the loop that it creates is not satisfactory, click on the gadget again and Audio Engineer looks for another set of loop points. Very useful.

**S**AMPLES can be saved in a variety of different formats. As well as the usual IFF 8SVX format, Audio Engineer allows you to save in extended IFF format with either three or five octaves. These extended files can then be used within packages such as Music-X and Deluxe Music. Mainly due to that fact that Audio Engineer was originally an Aegis

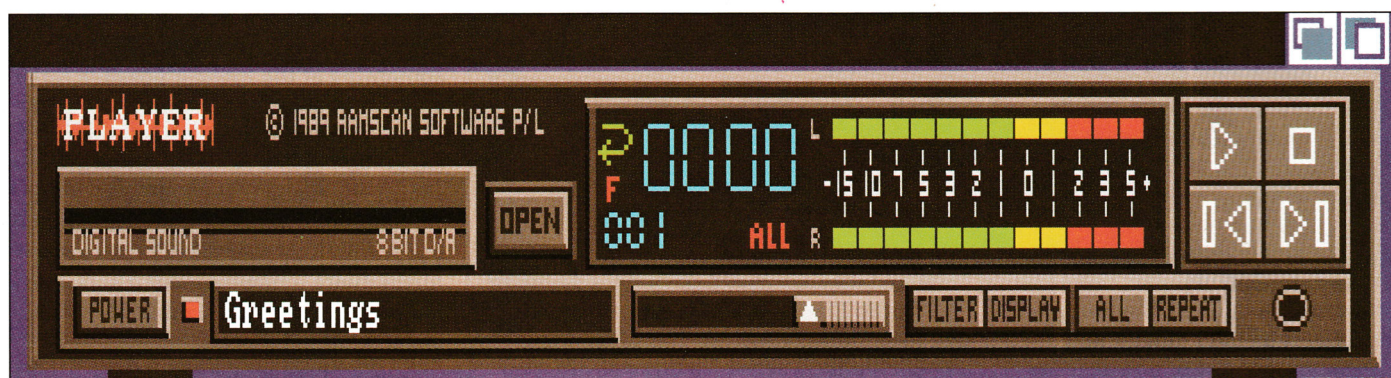


sample player is a rather nifty little program called *CD Player Simulator*. The program uses the same control system employed by an average home CD player, making it instantly accessible to most. Both regular and multi-loop samples can be loaded into one of the CD Player's tracks and played back.

Wow! Audio Engineer is simply breathtaking. Whether you're using it with a CD player, a tape recorder or even a humble microphone, Audio Engineer can produce some of the sharpest samples you're ever likely to

hear from an Amiga. Even if you're intending using Audio Engineer with a low cost sampler, you'll be amazed by the increase in sound quality.

The only thing that worries me is the price. Why do it have to be so damned expensive? Surely G-Soft's sampling cartridge cannot be that expensive to produce? Oh well, the best things in life always cost and arm and a leg (who ever said they were free?). If you can afford it, Audio Engineer is quite simply the best sampling system yet produced for the Amiga.



product, Audio Engineer will also save samples suitable for Aegis' Sonix package.

As an added bonus when saving samples, Audio Engineer employs a new IFF compression technique that allows an increased number of samples to be saved onto a single disk. As they stand, these samples can only be loaded into Audio Engineer, but RamScan do include both CLI and Workbench sample player programs.

Audio Engineer's Workbench-based

## FACTS

A.M.A.S

£99.95

Microdeal

0726 68020

Techno sound

£29.99

New Dimensions 0291 690933

Mastersound

£39.95

Microdeal

0726 68020

Pro Sound Designer Gold

£45

Power Computing 0234 273000

Stereo Sampler Mk II

£39.99

Trilogic

0274 691115

Audio Engineer Plus

£199.95

HB Marketing

0753 686000



# MASTER S.O.U.N.D

Sound sampling Hardware and SOFTWARE for the AMIGA

## WHAT IS MASTER SOUND?

MASTER SOUND is a low cost, high quality sound sampler for the AMIGA range of computers featuring advanced Sampling/Editing/Sequencing software. MASTER SOUND enables you to record sounds from devices such as Personal Cassette or Compact Disc players into the AMIGA. When in the Computer, MASTER SOUND'S unique editor will enable you to edit the sound in practically any way you can imagine. Once you have the sample how you want it, you may incorporate it into your own Demo's or programs or use MASTER SOUND'S own BUILT IN sample sequencer to play back the sample along with a number of others too!

## THE MASTER SOUND EDITOR

incorporates the following facilities:

- |           |            |              |              |
|-----------|------------|--------------|--------------|
| ★ SAMPLE  | ★ PLAY     | ★ PREVIEW    | ★ LOOP       |
| ★ CUT     | ★ COPY     | ★ OVERLAY    | ★ WIPE       |
| ★ FADE IN | ★ FADE OUT | ★ VOLUME     | ★ REVERSE    |
| ★ SHRINK  | ★ FILTER   | ★ MAGNIFY    | ★ TRIGGER    |
| ★ LOAD    | ★ SAVE     | ★ RAW FORMAT | ★ IFF FORMAT |
| ★ SCOPE   | ★ FFT      | ★ VU METER   | ★ SEQUENCER  |

The impressive realtime Spectrum Analyser and Oscilloscope enable the user to monitor frequency content and volume with ease and help you to ensure that the sample quality is at its best.

## THE MASTER SOUND SEQUENCER\*

Allows you to play back samples in a sequence. Multiple samples can be held in memory at once and sequences are as simple to record as tapping keys on the computer's keyboard. Once recorded, the Sequencer can save the samples and sequence file out onto disc so that the files can be used in your own demo's.

## THE MASTER SOUND DEMO

Allows you to play back your own sequenced sounds from the sequencer while displaying IFF picture files. This is great for creating your own public domain demo discs without having to be a computer programmer!



MASTER SOUND EDITOR



© MICRODEAL 1990  
ALL RIGHTS RESERVED

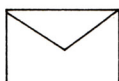
## MASTER SOUND ORDER FORM

Master Sound is £39.95 post & packing £1 (all prices inc V.A.T.)



**BY PHONE  
WITH  
CREDIT CARDS**

**(0726) 68020**



**BY POST:** with Cheque · Postal Order · or Credit Card

Name .....

Address .....

Post Code .....

Credit Card Type ..... Expiry Date .....

Number .....



Please allow 28 days for delivery

Send to: Microdeal · PO Box 68 · St Austell · Cornwall · England · PL25 4YB



# MONUMENTAL MUSIC STUDIO

**TEL: 0634 576353**

**2 MEG EXPANSION FOR  
AMIGA 500 £179.00 ONLY  
MONUMENTAL!**

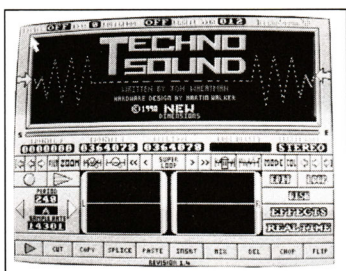
**16 TRACK RECORDING - INC.  
MUSIC X SEQUENCING  
£11.00 per hour  
MONUMENTAL!**

**YOUR MUSIC PUT ON VINYL, INC.  
FULL RECORDING & PRODUCTION  
£175.00  
MONUMENTAL!**

We also offer Music X tuition here at our studio.  
Blank quality 3.5 Discs at **35p** each,  
.5 Meg Expansion for **£35.00** - and  
**EXCELLENT RECORDINGS!**

**CALL US NOW ON 0634 576353  
MUSIC WITH AMIGAS IN MIND!**

## NEW FROM THE CREATORS OF STOS MAESTRO TECHNOSOUND AMIGA STEREO SOUND SAMPLER



- \* FREE SAMPLES DISK WITH 57 SAMPLES
- \* TRUE AND SIMULATED STEREO
- \* REAL TIME EFFECTS
- \* COMPREHENSIVE EDITING CAPABILITY
- \* EXTENSIVE LOOPING FACILITIES
- \* SAMPLING BY MUSICAL NOTE OR FREQUENCY
- \* STUNNING STUDIO STYLE EFFECTS  
ECHO-REVERB-HALL-ROOM-PHASE

PLUS **FREE** AUDIO  
TUTORIAL CASSETTE

NEW  
DIMENSIONS

BROOKLANDS HOUSE  
BRYNGWYN  
RAGLAN  
GWENT NP5 2AA  
0291-690933/690901

**£34.99**  
£24.99 WITHOUT CARTRIDGE  
+ £1.50 POST AND PACKING

## SOFTVILLE COMPUTER SUPPLIES

Unit 5, Stratfield Park, Eletra Ave,  
Waterlooville, Hants. PO7 7XN  
Tel: 0705 266509 Fax: 0705 251884



**Prices (each disc)**  
1 - 5 disks - £3 6 - 9 disks - £2.75  
10 or more - £2.50  
Buy ten choose another FREE  
Choose any 5 disks, get 5 blanks,  
labels and a library case  
for only £16.50  
Ask for starter pack



These are brief descriptions, the disks may  
contain much more. We are constantly updating  
our discs and ship the latest versions we have.

### DATABASE PROGRAMS

ACC26-DBMAN, easy to use  
ACC53-FIRSTBase, memory resident  
ACC72-DATA Handler, GEM based  
ACC74-FREEDBASE, menu driven  
ACC75-WGDATA, complete system  
ACC88-Database Construction, not v1.09  
ACC89-ZAPCard, card index style  
ACC92-SONGFILE, record collectors

### WORD PROCESSORS

WP12-STWriter Elite v3.8, the best  
WP66-MAGNWRITER, 3xhigh letters  
ACC21-WORD400, accessory wp.  
WP23-EDMAX, the text editor

### SPREADSHEETS

ACC23-VCSPREAD, onn GEM but usable  
ACC31-STSHEET, fully WKS compatible D/S  
ACC76-OPUS200, the best! - 1 meg

### FONTS

WP28-Pub Part fonts-Hudson, Columbia,  
Devoll, Thames, Spokane, Saturn etc.  
WP29-Pub Part fonts-Avgard, Caligrity,  
Courier, Elegance, West Side etc.  
WP63-CALAMUS fonts-Over 40 on this disk  
some complete, others upper case only.

### CLIP ART

All are mono, each disc contains a converter  
program. If you require them in .IMG format  
you need our disk ACC84 for a good converter  
WP8-Animals, Militaria, Flags etc.  
WP24-Trademarks from 1920's  
WP26-17 screens of Mac clip art  
WP31-Whimsical animals  
WP32-Office humour  
WP37-22 screens of FOODS  
WP41-15 screens of Christmas designs  
WP59-Garfield, 20 screens  
We have over 30 disks full of clip art, see our  
catalogue for pictures/descriptions

### UTILITIES

ACC24-MONO EMULATOR (not for art prgs)  
ACC57-TURTLE hard disk backup (1 meg)  
ACC63-UNTURTLE for use with the above  
ACC64-Star colour set-up etc.  
ACC69-Mouse pointer editor  
ACC70-STICKER3, disk labeller - high-res  
ACC79-QUICKDISC collection  
ACC80-picture converters  
ACC82-SUPERBOOT v6, all in one setuprg.  
ACC85-2 D/S disks of desk accessories - £6  
ACC86-ZX81 emulator  
ACC87-GEMINI replacement desktop  
ACC96-FCOPY3 - Good copy program  
ACC98-Hack 'n COPY copy program  
ACC99-VAULT hard disk backup prg (520)  
ACC100-LHARC, UNLZH, ARC6.02 etc.  
ACC101-BUSINESS/Personal address book

### ART and DRAWING

ART1-NEOCHROME, original and best  
ART4- MASTER PAINTER, excellent  
ART7-MANDELBROT/MEGABIT  
ART8-LANDSCAPE generator  
ART10-PALLETTE MASTER  
ART13-STUDIO/VAN-GOUGH  
ART15-FRACTAL - ZOOM  
ART24-PUBLIC PAINTER - High-res  
ART25-AN-ST, animation package  
ART27-E-PAINTER for children  
ART28-COLOUR BOOK for children

### COMMUNICATIONS

COMS3-UNITERM, standard package  
COMS16-VANTERM fats gaining popularity

## PUBLIC DOMAIN & SHAREWARE

for the ATARI ST range (Amiga, PC also available)

1. Huge selection - over 2000 disks
  2. Over Four years Experience
  3. Same day service (Mail & phone/fax before 12am)
  4. Pay by Access, Visa, Cheque, PO or cash
  5. Order by Phone, Mail or Fax
  6. Official/Government orders accepted
  7. 90 page catalogue FREE
  8. Professional Service, ring for advice!
- Send 28p SAE for our FREE catalogue, state ST

COMS17-ZFlash for use with Flash/Shadow  
COMS21-FLYINGSTART for Prestel

### GAMES - STRATEGY

GAME58-HACK D&D game (1 meg)  
GAME6-Colossal Cave, original  
GAME68-STARTREK (1 meg, not STE)  
GAME70-SPECTRAL SORCERY, good  
GAME83-Snatch & Crunch - adult!  
GAME84-ELVEN CRYSTALS  
GAME85-TARK, text adventure  
GAME103-TETRISIDE, TILES, VSQ (GOOD)  
GAME104-RISKY, version of RISK (hi-res)

### CARD/BOARD GAMES

GAME2-CHESS, MONOPOLY (USA)  
GAME9-CHECKERS, EBW  
GAME18-LASERCHESS, different  
GAME88-RACEPLUS, pseudo monopoly  
GAME89-ADDITION, Patience (not STE)

### QUIZ/EDUCATIONAL/KIDS

GAME11-KIDgraph, Note, Grid - section of the  
now famous brumlieve games for kids.  
GAME13-Tunnel Vision, great maze game  
GAME56-3 disk set - HISTORY FILE (£8)  
GAME61-KDpotato and others for Kids  
GAME62-NUMBERMAZE, Number-go-md  
GAME91-WORLD, test knowledge (hi-res)  
GAME93-Computer jargon quiz game  
GAME95-WOLF & KIDS, kids adventure  
GAME105-NOAHS ARC, spelling game

### ARCADE GAMES

GAME43-DURCHER, arkanoid clone  
GAME45-FLOYD the DROID, shoot 'em up  
GAME67-HEADS 'N HAMMERS (not STE)  
GAME73-SOLO, Goldrunner type game  
GAME94-SUPER Breakout, high-res only

### MISCELLANEOUS

MISC1-SKY MAP (hi-res)  
MISC2-ORBIT, satellite tracker (hi-res)  
MISC4-VIRUS KILLER DISK - £1.50  
MISC21-PLANETARUM, great program  
MISC26-CONSTELLATIONS (D/S)  
MISC18-INVENTORY-PRO, stock control  
MISC22-Double SENTRY, accounts package  
MISC23-POOLS PREDICTOR, clever program  
MISC27-FILM FIND Enquiry (D/S)  
MISC35-PATTERN CARD prg (knitting)  
MISC36-BSTAT statistical prg. (1 meg hi-res)  
MISC37-BLOG cycling diary (D/S 1 meg)  
MISC40-Complete solution Bards Tale 1

### MUSIC & MIDI

MUS5-Waddington sequencer, 32 track  
MUS32-COMPOSER mono & 1 meg needed  
MUS36-16 voice sequencer, colour  
MUS47-SONOVERT converts sound samples  
MUS50-ALCHIME Jr, 200+ tracks  
MUS51-STSOUND TRACKER (not Cbeats) (D/S Col)  
MUS53-SoundTracker module player (D/S 1 meg Col)  
MUS54-Modules for above (D/S colour)

### DEMONSTRATIONS

We have hundreds of product and graphic demonstrations  
- below is just a small selection (all are colour only)

DEM116-The UNION DEMO, now famous!  
DEM111-The JUNK demo, Care Bears  
DEM164-WHATAHECK DEMO, Bears (not STE)  
DEM206-SOWATT DEMO, Care Bears again!  
DEM223-SWEDISH NEW YEAR demo 2 (D/S)  
DEM228-ST CONNECTIONS demo (D/S)  
DEM235-Care Bears SOUNDTRACKER (D/S 1 meg)  
Below are for the new STE machines only  
DEM207-Official STE demo  
DEM214-FANTASIA, very good  
DEM215-3D SCROLLER DEMO  
DEM216-THE MOVIST DEMO

We have HUNDREDS of disks full of Pictures, STOS, Basic  
Ham Radio, Languages etc. in fact, everything you need



ORIGINALLY this feature was going to be nothing more than a review of some nice hardware and software. However, there was a problem: Who could review it for us?

The solution was obvious. This kit allowed anyone to produce magazine

# The Plain Man's Guide to Publishing



quality output. Who better to review than the magazine itself? In this case, that's means me.

So settle down and let me tell you a story about the exciting hi-tech world of magazine publishing here at Interactive Publishing. Are you sitting comfortably? Good, then I'll begin...

Producing a magazine such as your favourite *Amiga Computing* is a costly, labour intensive process. When flicking through the pages, you probably think of only the writers as having anything to do with "making" the magazine.

You probably couldn't be able to guess the number of people and the man-hours involved in each creating each individual page you casually glance at.

If you want to know how a magazine works, how it's put together, then read on. If not, well just skip this feature and go back to the games. Just remember one thing: Each page could have taken up to four hours to create.

**T**HIS time last year all the magazines produced in this building were created in the following way.

First the copy was written. This was probably the easiest part of the entire process, so we'll not dwell on it.

The words were then put on to a floppy disk and put through a

remarkably expensive dedicated typesetting computer. This machine ran out "bromides": To all intents and purposes a very high resolution photograph of all the words made up with the correct typefaces and sizes.

This photograph was cut up and pasted down on to a large sheet of paper. Corrections were often made by pasting new strips of paper over the top. Gaps were left where any pictures where to go. Thus the page was designed and laid out.

Eventually the camera-ready page was sent to the printers, where it met up with the artwork. In the meantime, the artwork had to go to visit a "repro house", where it was converted into a form the printer could use.

Finally, the page was printed. It was combined with all the others, bound into one volume, and hey presto! One copy of *Amiga Computing*.

**T**HINGS have changed enormously since then, due to the emergence of the desktop publishing phenomena. Now extensive use is made of the latest Macintosh micros, running DTP software such as Quark Express.

Here is how the magazine is put together now.

First the article is typed out on an Amiga using Protext. It is saved in Ascii format and converted into a Mac

*The dream of producing a full-colour magazine on the Amiga has become a reality, with a combination of software, hardware and a little American know how. John Kennedy puts pixel to paper and tells all*

readable form, using a utility called Mac-2-Dos.

Meanwhile on the Mac, Eddie, the layout person, has created a "template" of text columns and picture gaps on his screen. He loads our text into the Mac, and plays around with it until it looks as nice as Tym the art person wants it to.

Amiga-generated diagrams, game shots and digitised pictures are loaded into the Mac as well, using specially written software to convert the IFF images into a form which the Mac likes.

Some non-digital images, such as photographs which must maintain their very high quality, still have to go to the repro house.

Once on the Mac, further last minute editing can take place before the complete page is turned into a PostScript file. It is sent to another wonderful machine which churns out





films with all the words and pictures on them. Four films are needed to reproduce a full colour page – cyan, magenta, yellow and black. These films are sent to the printers, who use them to print the pages of the magazine.

At this point you may be saying, "What! You use Macintosh computers! I thought you were all Amiga fanatics!" This is a very valid thing to shout. In fact, it can be quite embarrassing for us to have to admit that our Amiga magazine is produced on rival computing hardware.

There are good reasons for using Macs, some of them financial, some political but most of them all to do with the lack of decent software available on the Amiga when the electronic revolution started.

I'm happy to say that this situation has changed. There is now enough high quality software available to allow everything that can be done on a Mac to be done on an Amiga. And a few other things as well.

Which brings me rather neatly to this pile of hardware and software I have on the desk in front of me. For those who can't see it – and that's everyone except me, I suppose – I have an expanded B2000 Amiga, a Sharp JX100 Handy Colour Scanner and a copy of ScanLab 100 software.

The last two items were lent to me by Silica Systems, and unfortunately I have a nasty feeling they will want them back in the near future.

What I have here is basically the capability to produce *Amiga Computing*, here and now. The main reason why I'm not going to is that it would take me about six months to produce each issue on my own. However, let me explain how I would go about doing it, given the chance and a time machine.

**F**IRSTLY, I would sit down write the copy using Protext. So far, so good. How long this takes depends a lot on what it is I'm writing about, when the deadline is due and how

much sleep I had the night before. An article like this would probably take 24 hours, split over the week.

Once written, I would load up my favourite DTP package, Professional Page. After consulting my past issues of *Amiga Computing* for house style, and Green's series on DTP for lay-out, I would create a rough page, leaving gaps for any pictures.

Now to the artwork: My favourite bit. Let's say, for the sake of example, I want to include a picture of Kilburn's answer to Kevin Schwantz – my friend Colin.

I have the original colour print in front of me, and it's just the right size for scanning, about 9 by 15cms. Time to connect the Handy Scanner to the Amiga and install the software on my hard disk, which incidentally, is very easy to do.

So the photograph is placed under the scanner, and a resolution selected. On a 1Mb machine – the barest minimum useful – I can just about scan a grey scale image.

With my extra memory, I can grab a

## The Sharp JX100 Colour Handy Scanner

**T**HE Sharp scanner is a lovely thing to have on your desk. It's small, quiet, compact and costs about £700. That's a lot of money to spend on one small piece of equipment, but let's have a look at what it can before deciding it's too expensive.

If you gave it to a computer illiterate person, there is no way they could ever guess what it's for. There are no buttons, no switches: Just a single cable leading away. It looks like a slightly larger than pocket-sized colour television set which hasn't been finished yet. Then you start using it...

Its main purpose in life is to convert photographs and drawings into something which your computer can use. It works in a very simple way:

The item to be scanned is placed underneath, and a miniature camera is dragged over it, converting the analogue data to digital data as it goes.

The hardware is supported by a specially written piece of software called ScanLab 100. This is typically ASDG: Totally Amiga-friendly program and is a doddle to use.

After selecting your image, and placing it under the 10 by 16 cm window you select a "preview" scan. This quickly and painlessly turns it into a miniature black and white image. Now all you have to do is draw a box around the part of the drawing you are interested in, and select the "fine scan" option.

Here a problem becomes apparent: On a 1Mb Amiga, you can only scan an area about 2 cm's square with the highest

resolution. You *really* need lots of memory. My Amiga has an extra 2Mb, but I still can't scan the full window.

It is recommended you have more than 4Mb. Yup, that's a whole lot of memory. However, if you are taking DTP at all seriously, you probably have this amount already.

From within the fine scanning screen you can select between the different resolutions and colour options. The scanner will work at 50, 100 and 200 dots per inch. You can scan in monochrome, 6 bit grey scale, 3 bit colour or 18 bit colour. Monochrome and grey scale scans can all be made in one pass, whereas colour scans take three different passes: One for red, one for green and one for blue.

Scanning in mono and in 3 bit



3 bit colour, 50 dpi, 12k



3 bit colour, 200 dpi, 201k



6 bit grey, 50 dpi, 25k



full 18 bit colour image at the maximum resolution of 200 dots per inch. Displayed onscreen in HAM mode, it looks fabulous. Perhaps with a very expensive colour digitiser and an even more expensive camera I could obtain similar results, but I doubt it.

It takes about five minutes to complete the scan of the image and save it to my hard disk. I can now reload the DTP package and place the scanned image. Looks good.

**A** FINAL check of the document, and it's finished. Time for output. To help me get the best from my graphics, I have a copy of *The Art Department*, also supplied by Silica.

With it, I can adjust the brightness, contrast and colour balance of the images, then separate them into their four colour components for output, using another little ASDG program call ReSep to re-combine the ProPage document with the illustrations. I

would have done this from the DTP package, but ProPage only separates 12 bit plane images, and my image uses 18 bit planes.

Rather cleverly, I have – theoretically at least – sitting beside me a very high resolution PostScript compatible laser printer. I send the four separations to this expensive piece of kit, and once they are finished I can rush them down to the local printers and have them re-combined into a full colour image.

If I didn't have the printer, I could take the PostScript file to a bureau, where they would do more or less the same thing. For more details on bureaux by the way, check out the DTP section in the almanac.

All I need do is repeat the above process over a hundred times, and I have a magazine.

**S**O you see: It can be done. It will be done, too. In fact, it has been done in the past by a well-known

(although sadly now defunct) American Amiga magazine. The latest hardware and software will make the entire process a lot easier and the finished product of higher quality.

Because of the large investment made in Mac technology at Interactive, it is unlikely that this magazine will be produced on an Amiga. But you can rest assured we do as much as we can before handing our text and images over to Eddie.

**N**OW it's time for a more detailed look at the products used. The exception will be Professional Page. ProPage, as we like to call it, differs from Page Setter II only in that it can handle colour images and output to a PostScript device.

Page Setter II was reviewed in the April 1990 issue of the magazine and a working demo was on last month's cover disk, so there is little to be gained by looking at it again.

colour is not recommended, for the software will reduce an 18 bit image to whatever depth you like with minimal loss of detail. The only reason for not doing so is a chronic lack of memory.

The highest resolution (200dpi) is by no means state of the art, but when combined with the 18 bit colour depth, it's pretty darn nifty.

The use of 18 bit planes means an awfully large number of colours can be produced: Many times more that the Amiga can generate using standard bitplane methods. Instead, you can make use of several "cheats" to look at all the colours.

Viewing the image in normal HAM mode will give you lots of colours but poor edge detail. Viewing the image in A-HAM mode will

The main scanning control panel

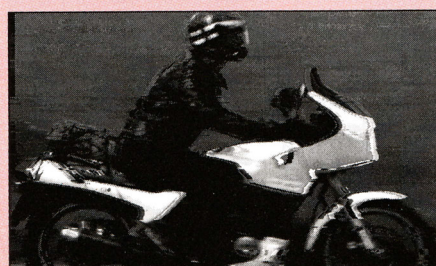


improve things somewhat.

Using A-RES format, and variants ARZ0 and ARZ1, will produce the best possible display. This mode is downwards compatible with the Dynamic Hires mode developed by Newtek for use with their DigiView Gold video digitiser. The pictures take

so much processor time to produce, that unfortunately all you can do is look at them. But they look very nice indeed.

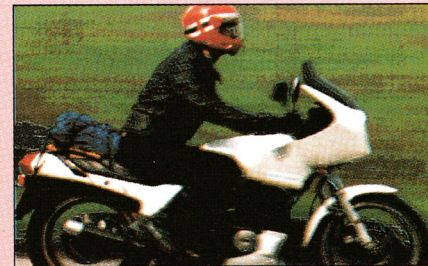
If you need to produce the best quality images you can and have a budget which will cover it, then go for it. Buy it.



6 bit grey, 200 dpi, 402k



18 bit colour, 50 dpi, 63k



18 bit colour, 200 dpi, 1000k



## Bits? Planes?

**T**HE normal way in which the Amiga generates colour graphics is to overlay several "sheets" of memory. Each of these sheets is called a *bitplane* and together they control the colour of each pixel on the screen.

For example, if a screen had a single bitplane it could only display two colours. If it had two bitplanes, it could have four different colours. (Check your binary arithmetic if this doesn't make sense to you.)

The maximum number of bitplanes the Amiga can control in this way is five: Therefore it can display up to 32 different colours.

However, it is possible to cheat. By using a sixth bitplane and switching the display hardware into a special

"Hold And Modify" mode, the Amiga can display all 4,096 of its possible colours on-screen at once. It works by using the fifth and sixth bitplanes to control how the first four planes control the individual red, green and blue components individually.

This explains why HAM image cannot deal with edges very well: Where the colour changes suddenly from light to dark, it takes several pixels for all the HAM values to follow suit.

There are several cunning ways to improve the edge blurring – for example, using 16 different starting colours which can be substituted at any time – but most put quite a strain on the poor old Amiga and leave no time for a program to run as well.

## REPORT CARD

**Sharp JX-1000 Handy Colour Scanner and ASDG ScanLab 100 software**  
£695  
Silica Systems 081-308 0888

### EASE OF USE....



*Within 15 minutes of delivery I had produced some of the best Amiga graphics I had ever seen.*

### VALUE .....



*It's expensive. You can buy cars and things for this kind of money! Now, if you were buying on behalf of a company then it's a totally different matter. Have you seen the price of some Mac peripherals?*

### RESULTS.....



*Can't fault it. Well, OK I can. I would like the resolution to be a bit higher. Even 300 dpi would keep me quiet for a bit longer.*

## OVERALL

**90%**

*This is an amazing device which proves that the Amiga is capable of doing anything that an Apple can, only cheaper.*

## The Art Department

**A**LTHOUGH The Art Department (TAD) makes a wonderful companion to the scanner, it is also a piece of software which any graphics artist will find useful. Thankfully, it's also an entire order of magnitude cheaper, although you'll have needed to have spent some money of memory expansion: You need more than 1Mb.

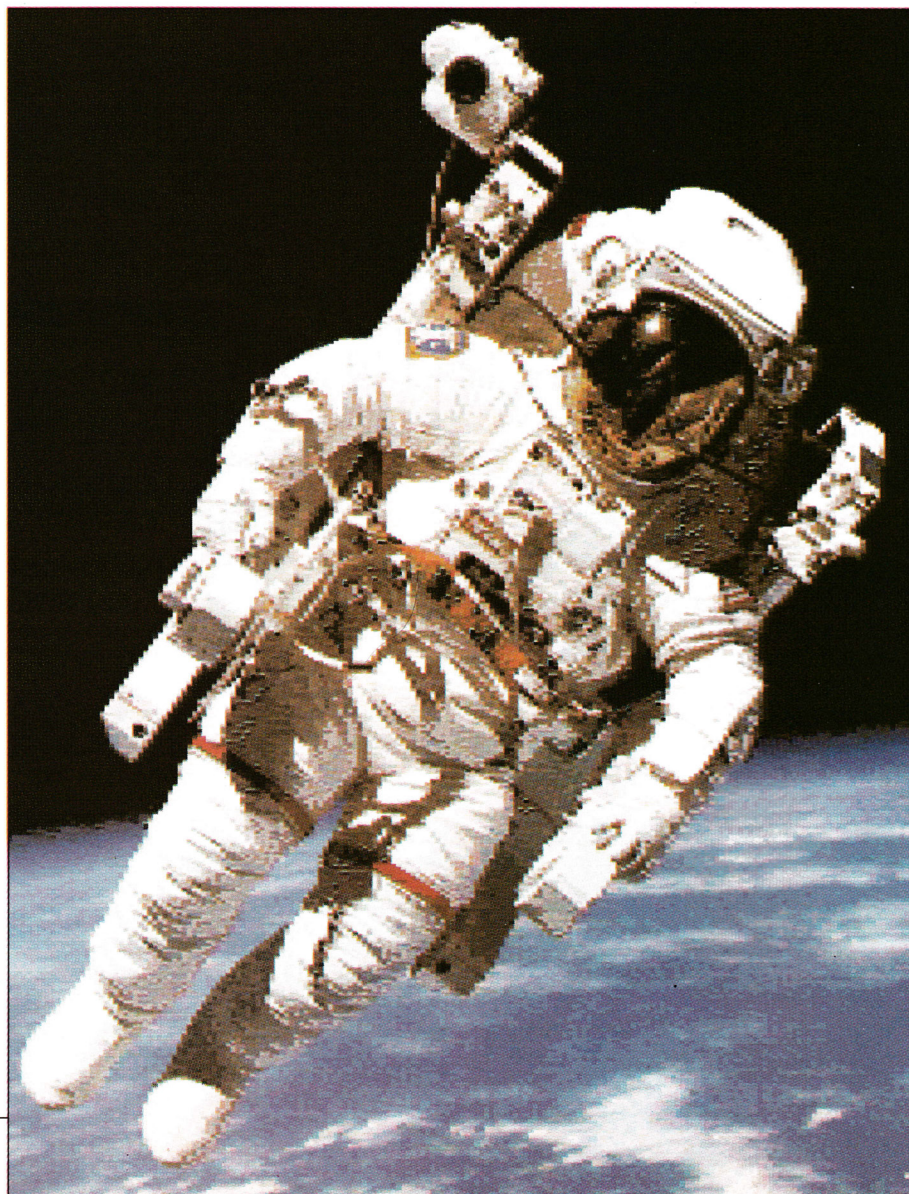
TAD is an image processing suite which works with an internal resolution of 24 bit planes. In some respects it is similar to the program PixMate, but a little more professional and a little less on the gimmicky side.

Back to the DIY magazine scenario, and I would use TAD to provide fine tuning over the contrast, brightness (gamma actually) and colour balance of my pictures. And separating of course, into 24 bit cyan, yellow, magenta and black files.

I would happily acknowledge and make use of the UCR (under colour removal) and GCR (grey component replacement) functions.

As a graphics artist – which I'm not, unfortunately – I would use TAD to convert images between the various Amiga screen formats (from line drawing to extra halfbrite to HAM to 32 colours to A-HAM and so forth).

I'd also use the RIP (remove





**Amiga Flight  
of Fantasy  
£369.95**



individual pixels) to tidy up any stray little dots which had somehow sneaked into the picture. I might also need to be able to resize the image, while maintaining complete control over the aspect ratio.

Since all internal calculations are carried out using 24 bitplanes, I know that my images are going to maintain their integrity as much as possible.

Using a series of "Loader" modules, TAD can make use of graphic formats other than good 'ole IFF. As well as Amiga-based formats such as Sculpt and Impulse, it can load PC and Mac type images. An impressive bit of future thinking, and an impressive piece of software.

## And there's more...

AN ever better version of TAD is available –The Art Department Professional. It differs by supporting Arexx (essential for enabling long and boring batch jobs), saving in different formats (TAD only loads) and direct support of external hardware (such as scanners, 24 bit frame cards).

It means that the Amiga could become the central image processing computer in a set-up comprising all sorts of different machinery.

ASDG are providing an upgrade offer, so if you own TAD check it out.

## REPORT CARD

ASDG's The Art Department  
£69.95  
Silica Systems

### EASE OF USE....

No problems.

### FEATURES .....

I kind of miss some of the little things which PixMate could do. However, for DTPing with graphics you can't beat TAD.

### VALUE .....

A similar program on another micro would cost many, many times more than this.

## OVERALL

88%

A useful, reliable and downright worthwhile program.

## How these images were made

ALL the images were dealt with as normal 8, 16 or HAM colour IFF files. They were converted to TIFF format, and loaded into the Mac systems as normal.

Unfortunately this means that you are not seeing the images at their very best.

The 18 bit plane files were just too large to convert to TIFFs with existing office technology (in other words, the

Macs). This is why the HAM image was used instead.

What it boils down to is that the colours are almost as you would see them, but the detail – especially around edges – is misleadingly poor.

Some of the images elsewhere in this issue of *Amiga Computing* have been generated using the kit described in this feature. See if you can spot them all!



A photograph, scanned at 200dpi and 18 bit planes colour. This is the image which was loaded into The Art Department



The same image in EHB (Extra Half Brite) mode



Finally, processed to produce "line art"





RETURN THE COUPON FOR FREE COLOUR BROCHURES!

# NEW! - AMIGA PACK

Commodore A500  
Flight Of Fantasy

£399

INC  
VAT



## A500 BATMAN PACK



The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the Commodore Amiga 500 computer with mouse controller and TV modulator, plus four top software titles. The software includes: **Batman The Movie** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

### PACK INCLUDES:

A500 Computer & Mouse £399.99  
A520 TV Modulator ..... £24.99  
Batman The Movie ..... £24.95  
New Zealand Story ..... £24.95  
Interceptor ..... £24.95  
Deluxe Paint II ..... £49.95

TOTAL RRP: £549.78

Less Pack Saving: £150.78

PACK PRICE: £399.00

£399 INC  
VAT

## AMIGA 2000



For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

£1295  
+VAT= £1489.25

## FLIGHT OF FANTASY

Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

### DELUXE PAINT II:

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

### ESCAPE / ROBOT MONSTERS:

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

### RAINBOW ISLANDS:

Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Don to Monster Island, you will encounter Don himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

### F29 RETALIATOR:

The ultimate in flight simulation with a choice of two aircraft and four battle environments with dozens of different tactical missions. Aerial combat, strategic bombings, interactive ground based battles, seagoing carriers ... the list of features is endless. Real time cockpit displays, including 'true radar' enhance the realistic feel of this stunning simulation.

### PACK INCLUDES:

A500 Computer & Mouse £399.99  
A520 TV Modulator ..... £24.99  
Deluxe Paint II ..... £49.95  
Escape/Robot Monsters £19.99  
Rainbow Islands ..... £24.95  
F29 Retaliator ..... £24.95

TOTAL RRP: £544.82

Less Pack Saving: £145.82

PACK PRICE: £399.00

£399 INC  
VAT

FOR FURTHER DETAILS OF THE AMIGA RANGE, COMPLETE THE COUPON AND RETURN IT TO SILICA SHOP  
THE UK's No1 AMIGA SPECIALISTS

## SILICA SHOP OFFER YOU

**FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.  
**TECHNICAL SUPPORT HELPLINE:** Team of Amiga technical experts at your service.  
**PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.  
**ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.  
**£13M TURNOVER (with 60 staff):** Solid and reliable with maintained growth.  
**BUSINESS/EDUCATION/GOVERNMENT:** Volume discounts available for large orders.  
**SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.  
**THE FULL STOCK RANGE:** All of your Amiga requirements from one supplier.  
**FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.  
**PAYMENT:** By cash, cheque and all major credit cards.  
**CREDIT PAYMENT TERMS:** Silica are licensed credit brokers - return coupon for details.

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Shop, we ensure that you will have nothing to worry about. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature and begin to experience the "Silica Shop Service".

RETURN THE COUPON NOW FOR  
FREE BROCHURES

SILICA  
SHOP



**MAIL ORDER:** 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-309 1111  
Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening Fax No: 081-308 0608

**LONDON SHOP:** 52 Tottenham Court Road, London, W1P 0BA Tel: 071-580 4000  
Opening Hours: Mon-Sat 9.30am-6.00pm Late Night: Thursday until 8pm Fax No: 071-323 4737

**SIDCUP SHOP:** 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-302 8811  
Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday until 7pm Fax No: 081-309 0017

**BUSINESS/EDUCATION:** 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Tel: 081-308 0888  
Order Lines Open: Mon-Fri 9.00am-6.00pm Closed on Saturdays Fax No: 081-308 0608

To: Silica Shop, Dept AMCOM-1190-32, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

## PLEASE SEND INFORMATION ON THE AMIGA

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

Postcode: ..... Tel: .....

Which computer(s), if any, do you own? ..... A2000 ☐

£&OE - Advertised prices and specifications may change - please return the coupon for the latest information.



# Distinctly Digita

Cleverly written and always favourably reviewed in the press, Digita produces a range of powerful, low cost software for the home and business user.

## DGCALC

The fastest and most powerful spreadsheet available in this price bracket, with 512 rows by 52 columns, giving you up to 26624 cells. As with all Digita products, the operation of the program is clearly thought out. Being either menu, mouse or command driven you'll be able to start using it within minutes – even if you've never used a spreadsheet before. Some of the features which make it such good value are the exporting of ASCII files for integration with other programs, adjustable column width and text overflow, programmable function keys (macros), and a unique windowing facility, so that you can look at different parts of a sheet at the same time.

£39.95

## MAILSHOT

If you ever need to send out mailings or print labels, you know how fiddly and time-consuming it can be making sure all the labels are printed correctly. Well now all that's a thing of the past. Because Mailshot actually shows you the labels on screen, you can type names and addresses in exactly the correct place. But more than that, the labels are animated on screen as a continuous sheet, allowing you to scroll backwards and forwards, to search for particular keywords or to edit entries with the minimum of fuss. Facilities include searching, detection of duplicate labels, sorting (even surname!) 9 labels across, 999 copies of any label. This has to be the simplest and most effective method of creating a mailshot available.

£24.95

## FINAL ACCOUNTS

The program will take information prepared by Cashbook Controller and produce a complete set of accounts including:

- \* Trial Balance
- \* Trading and Profit and Loss Account
- \* Balance Sheet
- \* Notes to the Accounts
- \* Full Accounting ratios.

All reports may be produced at any time, with comparative/budget figures if required. The facility to produce these documents quickly, accurately, and regularly is of enormous help in running any business, large or small, since one shows the true profitability achieved, and the other the exact strength of the business in terms of assets and liabilities.

£29.95

## E-TYPE

Do you ever have to print names and addresses at awkward places on envelopes, or do you ever need to fill in tricky forms or invoices where the text has to be in exactly the right place? Usually you have to do it by hand, or get your trusty old typewriter out of the cupboard and dust it off. Well not anymore. The Emulated TYPEwriter transforms your computer and printer into a fully fledged typewriter, supporting bold, underline, italic and other type-styles. Because it can display and print text INSTANTLY you can line up your form, press Return and Space a few times to move to the correct place, and then start typing. Alternatively you can switch to line-by-line mode, which offers word-wrap, justification and proportional spacing, so that you can edit each line before it's printed.

£39.95

## MAILSHOT PLUS

Advanced version of Mailshot for the business user with the following extra facilities:

- \* integration with other software (using ASCII files)
- \* column/tabulated summary (ideal for telephone lists, etc)
- \* 4 extra memo lines per label (with defaults)
- \* system for coding, dating and adding messages to each label
- \* different layouts available for horizontal and vertical justification.

£49.95

## CLASSIC INVADERS

Escape from executive stress with the classic space invader game.

£14.95

## PERSONAL TAX PLANNER

Are you absolutely sure your taxman is doing his job correctly? Plan your own tax with ease, this menu-driven program will calculate your income tax liability (4 tax years included) and provide pertinent facts about your tax position. You can perform 'what-if?' calculation to discover ways to minimise your tax liability. In fact, the program will advise you on things such as, if you are a married man, whether it would be advantageous to have your wife's income taxed separately or not. At this price who knows, you will probably find that PTP will pay for itself in tax savings the first time you use it!

\*\* STOP PRESS \*\*

July '89 – PTP user receives tax refund of over £2,000!!

£39.95

## DAY-BY-DAY

An excellent way to get organised. With it you'll be reminded of birthdays and other anniversaries, meetings and appointments, phone calls to make and so on. As with all Digita products, inputting information is simplicity itself and, once entered, you can search for keywords or for particular events such as birthdays to see when one is coming up. Includes month/week/day planner, automatic reminders for overdue appointments, month and week summary at a glance. For less than £30 this is the ideal way to make sure you never miss that important occasion again!

£29.95

## SYSTEM 3

Take the first essential step in computerising your business with this simple integrated suite of programs:

1. CASHFLOW CONTROLLER: Keep track of the most important aspect of business – cash flow. Essentially a debit/credit ledger, its flexibility lies in its ability to produce account balances instantly for debtors (from invoicing), creditors, VAT, Bank, Petty Cash, together with a record of all transactions, dates and descriptions.
2. INVOICE & STATEMENTS: This program will greatly reduce time and cost of preparing invoices and statements. Professionally printed invoices will greatly integrate with Stock Control.
3. STOCK CONTROL: Effectively control your stock, purchasing and suppliers and produce re-order reports, stock valuation, price lists, etc.

£49.95

## CASHBOOK

Use your computer as a powerful business tool and take the drudgery out of book keeping! In its simplest form, the Digita program will replace your Cash and Petty Cash books BUT information includes:

- \* Summary of VAT information to enable completion of VAT Return.
- \* Monthly summaries and departmental analyses of sales and purchases.
- \* Total debtors and creditors, sales and overheads.
- \* Income and expenditure analysis.
- \* Journal routine for entering transfers and meets legal requirements, assuring correct approach to book keeping.
- \* Full audit trail and integrates with Final Accounts.

£49.95

## HOME ACCOUNTS

Ideal for both home users and small business. Simple to use, this package will keep track of all your finances and cater for 10 types of income (e.g. Bank, credit card) and 50 types of expenditure (e.g. rates, mortgage, gas, food), with optional budgeting and forecasting. The program will handle Standing Orders and Direct Debits, and automatically warn if your credit limit. With the comprehensive reporting and graphics facilities you can even produce your own monthly Bank/Credit card statements! Once you've used Home Accounts, you'll wonder how you ever managed without it.

£29.95

Available to the trade from:  
Digita, GEM, Greyhound,  
HB Marketing, Lazer,  
Leisuresoft, R & R, SDL.

**DIGITA**  
INTERNATIONAL

"Serious software at a sensible price"

All software written in the UK. Prices include VAT & P & P (add £2.00 for export)

• HOW TO ORDER •  
CREDIT CARD HOTLINE



0395 270273



Post: Digita International Ltd  
Black Horse House  
Exmouth Devon  
EX8 1JL England  
Fax: 0395 268893



# Questionnaire

We're planning big changes to Amiga Computing, and we need your help! By filling in and returning the questionnaire, you'll help us to make sure that we are producing the magazine YOU want to read.

As an added incentive, five lucky people drawn at random will be awarded a prize. As we don't know what you would like, we'll give you the choice: That's right, just pick your own prize!

## Section 1 - Personal details

You do not need to answer all the questions in this section

Q. Are you male or female?

Male ☐

Female ☐

Q. How old are you?

Q. What is your occupation?

\_\_\_\_\_

Q. How much do you earn per year?

£ \_\_\_\_\_

## Section 2 - Buying habits

Q. What daily newspaper do you read?

\_\_\_\_\_

Q. Which of the following magazines do you read, besides *Amiga Computing*?

- |                          |                          |
|--------------------------|--------------------------|
| Amiga Action             | <input type="checkbox"/> |
| Amiga World              | <input type="checkbox"/> |
| Amazing Computing        | <input type="checkbox"/> |
| Amiga Format             | <input type="checkbox"/> |
| New Computer Express     | <input type="checkbox"/> |
| The One                  | <input type="checkbox"/> |
| Computer and Video Games | <input type="checkbox"/> |
| Rampage                  | <input type="checkbox"/> |
| Amiga Fun                | <input type="checkbox"/> |
| New Computer Express     | <input type="checkbox"/> |
| 2000AD                   | <input type="checkbox"/> |
| Amiga User International | <input type="checkbox"/> |
| The Games Machine        | <input type="checkbox"/> |
| Zero                     | <input type="checkbox"/> |
| Q                        | <input type="checkbox"/> |

Any others?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q. Which of the following pieces of hardware do you own, or intend to buy?

	Own	Intend to
A500	<input type="checkbox"/>	<input type="checkbox"/>
A1000	<input type="checkbox"/>	<input type="checkbox"/>
A2000	<input type="checkbox"/>	<input type="checkbox"/>
A3000	<input type="checkbox"/>	<input type="checkbox"/>
.5 Mb memory expansion	<input type="checkbox"/>	<input type="checkbox"/>
Further memory expansion	<input type="checkbox"/>	<input type="checkbox"/>
External floppy disk drive	<input type="checkbox"/>	<input type="checkbox"/>
Hard drive	<input type="checkbox"/>	<input type="checkbox"/>
Colour Monitor	<input type="checkbox"/>	<input type="checkbox"/>
Mono Monitor	<input type="checkbox"/>	<input type="checkbox"/>
Video digitiser	<input type="checkbox"/>	<input type="checkbox"/>
Sound sampler	<input type="checkbox"/>	<input type="checkbox"/>
MIDI interface	<input type="checkbox"/>	<input type="checkbox"/>
Trackball	<input type="checkbox"/>	<input type="checkbox"/>
Genlock	<input type="checkbox"/>	<input type="checkbox"/>
Printer	<input type="checkbox"/>	<input type="checkbox"/>
Modem	<input type="checkbox"/>	<input type="checkbox"/>
Scanner	<input type="checkbox"/>	<input type="checkbox"/>

Q. If you own a printer, what make and type is it?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Q. How much do you spend on games software in a month?

£ \_\_\_\_\_

Q. How much do you spend on non-games software in a month?

£ \_\_\_\_\_

Q. How do you buy most of your hardware and software?

Mail order ☐

Shop ☐

## Section 3 - The magazine

Q. How many of the past six issues of *Amiga Computing* have you bought?

Q. Have you ever had problems finding a copy in your newsagents? If so please give their name and address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q. How many people – besides yourself – read your copy of *Amiga Computing*?

Q. What changes would you make to the magazine if you could?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NAME YOUR OWN PRIZE: Turn the page!**



### Section 3 - The magazine (Continued)

**Q.** In your opinion, how much coverage is there given to each of the following topics?

	Not enough	Just right
News	<input type="checkbox"/>	<input type="checkbox"/>
Letters	<input type="checkbox"/>	<input type="checkbox"/>
Game news	<input type="checkbox"/>	<input type="checkbox"/>
Game reviews	<input type="checkbox"/>	<input type="checkbox"/>
Game cheats	<input type="checkbox"/>	<input type="checkbox"/>
Music	<input type="checkbox"/>	<input type="checkbox"/>
Graphics	<input type="checkbox"/>	<input type="checkbox"/>
Public Domain	<input type="checkbox"/>	<input type="checkbox"/>
DTP	<input type="checkbox"/>	<input type="checkbox"/>
Comms	<input type="checkbox"/>	<input type="checkbox"/>
Machine code	<input type="checkbox"/>	<input type="checkbox"/>
AMOS	<input type="checkbox"/>	<input type="checkbox"/>
C Programming	<input type="checkbox"/>	<input type="checkbox"/>
Hardware Reviews	<input type="checkbox"/>	<input type="checkbox"/>
Software Reviews	<input type="checkbox"/>	<input type="checkbox"/>
DIY Projects	<input type="checkbox"/>	<input type="checkbox"/>
Tutorials	<input type="checkbox"/>	<input type="checkbox"/>

**Q.** What topics would you like to be covered in the magazine which are not covered at the moment?

---



---



---



---



---

**Q.** What do you think of the magazine's "sense of humour" ?

- There shouldn't be one ☐
- I didn't know there was one ☐
- I like it as it is ☐
- There should be more of one ☐

### Section 4 - The Cover Disk

**Q.** Which is more important to you when you decide whether to buy an issue of *Amiga Computing*?

- The disk ☐
- The magazine ☐
- Both equally important ☐
- Don't care ☐

**Q.** How much coverage of the following topics is there on the disk?

	Not enough	Just right	Too much
Game demos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Complete games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tunes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workbench hacks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q.** If there were TWO disks on the cover, and the magazine cost an extra pound, would you:

- Stop buying it ☐
- Buy it more often ☐
- Carry on regardless ☐

### Section 5 - Using your Amiga

**Q.** How do you use your Amiga?

	A lot/Sometimes/Never		
Playing games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video applications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animation/graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Word Processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Music applications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DTP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other uses (Please state)

---



---



---



---



---

### Section 6 - The Competition

**Q.** What prize would you like to win?

---



---



---



---



---

**Q.** Why would you like this prize in particular?

---



---



---



---



---

**Q.** Would you object to your name being put on a mailing list?

- Yes ☐ No ☐

Your name:

---

Your address:

---



---



---



---



---

Your signature:

---

**SEND TO:**

**Amiga Computing  
Questionnaire**

**Europa House,  
Adlington Park,  
Macclesfield SK10 4NP.**



# AMIGA A500 POWER PACK

- Latest uprated high current power supply
- 100% extra power for external disc drives
- Crowbar cut-out short circuit protection
- Direct replacement for existing power pack
- State of the art switch mode technology
- 12 month warranty
- In stock now!



**£49.99**

Price includes VAT and post and packing

**Tel: 0582 491949**

Send order with payment to:

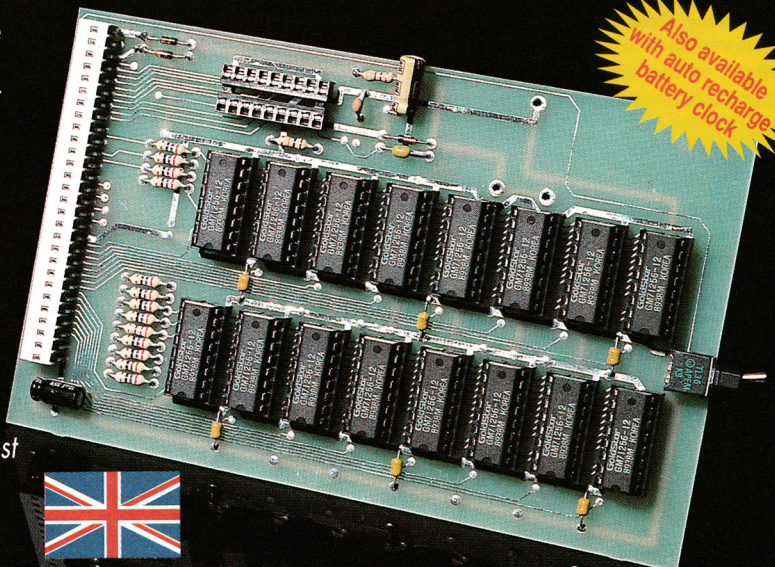
**WTS ELECTRONICS LTD**, Chaul End Lane, Luton, Beds LU4 8EZ

See us at the Commodore Christmas Show  
STAND NO. 129

# AMIGA 500 MAMMOTH 1/2 MEG UPGRADE

**LATEST DESIGN INCORPORATES 'CHIPMEN' OPTION AT NO EXTRA COST!**

- Increases computer memory from normal 1/2 megabyte to 1 megabyte
- Includes disable switch/incorporates high quality silver coated pin connector
- 16 bit technology
- Fit in minutes
- Direct replacement of Commodore A501 expansion
- Includes "CHIPMEM OPTION" – Phone for details
- 12 month warranty
- In stock now!



Also available  
with auto recharge  
battery clock

**£33.00**

Price includes VAT and post and packing

**Tel: 0582 491949**



BRITISH MADE

Send order with payment to:

**WTS ELECTRONICS LTD**, Chaul End Lane, Luton, Beds LU4 8EZ



# Pdom PD Amiga Public Domain & Shareware Software



## Graphics

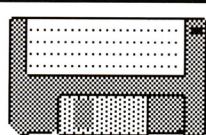
**AMP3** - Graphics Pack 1 Clip It! clip any part of the screen and save to disk, Filter Pics manipulate pictures with enhancers, edge definition, colour and size shifters, Amiga MCAD excellent CAD package. IFF to pieces jigsaw program, ROT 3D drawing prog, VDraw V1.19 brilliant painting program, Ray Tracer Generator. A 3 disk pack only £7.50.  
**AMP21** - Graphics Pack 2 - DBW Render a very good Ray Tracing utility, Mandelbrot Explorer. Excellent full features mandelbrot designer, ST2IFF convert Atari ST pictures to Amiga IFF format. HAM Editor drawing program. HAM to IFF convertor. A 3 disk pack only £7.50.  
**FFISH 295** - Mandel Mountains V1.1. Mandel Brot Generator.  
**FFISH 334** - FBM is an image manipulator and convertor : Sun, GIF, IFF, PCX, PBM bitmaps, Can input raw images, and output PostScript & Diablo. Also does rectangular extraction, density and contrast changes, rotation, quantization, halftone grayscaling etc. etc. etc.

**Utility Stop Press!**  
**We have loads of excellent utility disk compilations.**  
**Our DiskCat has a fast search option for the best!**



## Games

**AMP8** - Game Pack 1 - Clue as in Cluedo, Othello, Klondike, Canfield, Cribbage, ackgammon, Yahzee, TVision, Missile ommand, Cosmo 2, 3D Breakout, Empire, Gravity Wars, Hanoi, Hockey, ikoff, Jackland, Othello Master, Pacman, all rilliant PD games. 3 disks only £7.50!  
**AMP22** - Games Pack 2 - Amoeba space invaders, CosmoRoids, Stone Age a Boulder Dash type, Back Gammon, Chain Reaction, Master Mind, Reversi, Black Jack, Crazy Eights, Klondike, Jig Saw, Keno, YachtC, Daleks, Ratmaze, Monopoly and Escape From Jovi the excellent game. A 3 disk pack only £7.50.  
**PDOM 90** - Tennis! The best shareware game on the Amiga. Excellent! Requires 1Mb of RAM.  
**PDOM 79, PDOM 80 & PDOM 81** - Star Trek 3 disk game. Amazing graphics! Fully working. Brilliant! Requires 1MB RAM.  
**PDOM 215, PDOM 216** - Star Trek 2 disk game. Totally different, and even better excellent game!  
**PDOM 233** - The Holy Grail Adventure Requires 1MB RAM. Excellent adventure!  
**PDOM 234** - The Golden Fleece Adventure.  
**PDOM 283** - Callisto, Daleks, Pontoon, Puz, World text adventure, Zerg fantasy role-playing game



## Utility

**FFISH 327** - Msh handles MSDOS/ST formatted disks. You can use files on such disks in almost exactly the same way as you use files on native AmigaDOS disks. This is a fully functional, read/write version.  
**PDOM 62** - The Public Dominator Anti Virus Disk contains all you need in the fight against viruses.  
**FFISH 342** - IE V1.0 is an icon editor up to 640x200 pixels in size also dual render. Fully featured.  
**FFISH 244** - Boot Block Champion V3.1 load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300.  
**PDOM 278** - LHARCa V0.99a the file compressor 100% compatible with MSDOS LHARC V1.13c.  
**AMICUS 22** - Printer Driver Generator V2.3.  
**TBAG 28** - MachII features: configurable, your help screen, mouse accelerator, PopCLI, Screen Blanker, Mouse OFF, Sun Mouse, Click To Front, Cycle, Window and Screen Shuffler, CLock, Alarm, Beeper etc. DiskSalv V1.32 the disk recoverer.  
**NewZap** file sector editor.  
**TBAG 30** - MyMenu create your own menu on WB to run any comands.  
**Icon Meister V1.4** THE Icon editor.  
**TBAG 31** - ShoWiz V2.0 show ANY picture with or without a script 1 picture or several disks full, also play a music file in the background! Also show text files in any colour!

## GET OUR DISKCAT!



## Application

**AMP1** - Home Business Pack : UEdit word processor, Visicalc spreadsheet, RIM and Hyperbase databases and spell checkers etc. 3 disks only £7.50!  
**APDC 17** - 2 Micro Emac editors: Micro GnuEmacs MicroEmacs.  
**FFISH 144** - Analyticalc V22.3D is a large & powerful spreadsheet program requires 1MB RAM and one floppy.  
**AMICUS 17** - Communications: COMM v1.33, Aterm V7.2, VT-100 V2.6, VTek V2.3.1, Amiga Host V0.9 for Compu-Serve.  
**FFISH 195** - Micro Emacs V3.10 the editor which is very comprehensive. Includes source and extensive on line documentation.  
**FFISH 219** - Deep Sky. V5.0 is a database containing info on 10,368 non-stellar objects, 600 colour contrasting easily resolved double stars, 70 stars for setting circles and miscellaneous white dwarfs, red starsec. The whole lot is ZOOd (archived) down to fit onto the disk and will unZOO to 1.2 Mb of info. ZOO is not supplied.  
**PDOM Clip It! Vol1.** Nearly 3Mb of clip art in standard IFF format. Subjects covered are varied but are mainly: sports, flags, animals, cartoons, humorous, Christmas, Jewish, borders, Halloween, Valentines, horses, eyes, alphabets, hands, 1930's trade marks, zodiac, cars and many more. All compatible with DPaint II. All in black and white. 5 disks full.



## Miscellaneous

**PDOM 211** - NorthC the latest all features excellent C compiler. Suitable for beginners and the knowledgeable alike. Fully comprehensive.  
**FFISH 337** - CManual V1.0 is a complete C manual for the Amiga which describes how to open and work with screens, windows, graphics, gadgets, requesters, alerts, menus, IDCMP, sprites, etc. Includes huge manual file and over 70 fully executable examples with source code. When unpacked fills up 3 disks.  
**FFISH 314** - A68k v2.61 the 68000 macro assembler. Excellent.  
**FFISH 339** - PCQ V1.1cis a freely redistributable, self compiling, Pascal compiler. The only major feature of Pascal that is not implemented is sets.  
**FFISH 349** - MED V2.0 is a music editor much like SoundTracker with MIDI sequencing.  
**AMP11** - 5 disks full of Sonix files with the PD Sonix player. £12.50!  
**AMP23** - 5 disks full of Soundtracker files includes Sound Tracker versions 1,2,3 and 4. £12.50!  
**PDOM 285** - Game Music Creator. Supports MIDI, can handle all types of samples -IFF with loops, Raw etc., both contigious and pattern recording, Note half stepup/down function, 64 patterns in memory, can load both Soundtracker & SoundFX songs (converted with GMC conv.), Replay routine brutally much faster than Soundtrackers, Includes Pattern break, Position jump etc etc...



## Demos

**PDOM 212** - Red Sector CEBIT '90 demo. Another excellent demo from RSI!  
**PDOM 213** - Rebels Coma demo an absolutely brilliant non stop demo totally different, and very original!  
**PDOM 214** - Fractal Flight. Created by HyperCube Engineerings' fractal landscape generator. Requires 1MB RAM BRILLIANT!  
**PDOM 148** - Escape from Singes Castle another amazing animation demo of the interactive game. Excellent follow up to Space Ace!  
**PDOM 1** - The Walker Demo I is a mega animation demo that requires 1Mb RAM.  
**PDOM 2** - The Walker II the mega mega animation demo that requires 1Mb RAM.  
**FFISH 196** - Stunning digitised HAM pictures. Excellent! The quality is astounding.  
**PDOM 27** - Alcatraz Mega Demo II. Mega!!  
**PDOM 65 & PDOM 66** Red Sector Mega Demo. THE best demo on the Amiga! Amazing graphics, fabulous sounds, astounding vector graphics!  
**PDOM 73** - Star Trek Enterprise Leaves Dock.  
**PDOM 74** - Star Trek the Starship Enterprise flying around in a circle.  
**PDOM 76** - Star Trek Shuttle landing on the SS Enterprise.  
**PDOM 83** - Space Ace demo. Excellent aniamtion with excellent sampled sound!!

**We've always got the latest Music and Graphic demos.**  
**Our DiskCat has a fast search option for the best!**



To order, simply quote the disk code number given in bold.  
 Prices: 1 to 5 disks are £3.00 each,  
 6 to 10 £2.75 each,  
 11 or more £2.50 each.  
 All orders sent by first class post.

All prices are fully inclusive. To order please send a cheque or postal order payable to Pdom PD Amiga or Access & Visa credit card details to:  
 Pdom PD Amiga AC, P O Box 801,  
 Bishop's Stortford, Hertfordshire, CM23 3TZ.

**Tel 0279 757692.**



*Stewart C. Russell looks at the thinking man's version of MFI furniture – public domain software. Read the instructions carefully and you too could be a DIY hero with word processors, Assemblers and C*



# Home assembly time

**W**HEN I started writing these articles I had hoped to do special features on "Build Your Own" systems, such as a Build Your Own Home Business pack, or a Build Your Own Programming system. This first time I present the Build Your Own Assembly Language Development kit.

Quite a lot of people want to get into assembly language programming, but the high cost of an assembler/debugger system either puts people off, or turns them to piracy.

I don't (as you know) dig theft, and it grieves me to see Kuma's K-Seka on open download from unscrupulous public bulletin boards. None of these boards, I hasten to add, are in the UK.

The absolute minimum you need is an editor, an assembler, a linker and a debugger. Everyone already has a debugger in the shape of Commodore's ROM-Wack burnt into the Kickstart ROM. Unfortunately, to use ROM-Wack you need a 9600 baud serial terminal and a very large masochistic streak.

You can use Commodore's Ed, Edit (yucko !) or MEMacs as your text

editor, or you can go for a slightly better one from the many available in the PD collections. Remember, you don't need (and often don't want) word-wrap, so the tiny Textra we gave away yonks ago on a cover disk is adequate.

Assembler-wise, there's really only one choice. A68k, written by Charlie Gibbs, has been continuously upgraded over the last three years. It's fast, feature-filled, and free. It's a plain 68000 assembler, which takes a source file on disk and writes a linkable

object file back.

You need a linker to convert the linkable object file to an executable object. There's only one available, and that is Blink, by The Software Distillery. It's several orders of magnitude quicker than the Commodore/Metacomco Alink, and has a few extra features too.

The debugger is of extreme importance. As long as an assembler and linker do actually assemble and link, you can create code. But if the debugger doesn't have as many features as possible, you may never find the subtle bug which is stopping your program from running correctly.

Timo Rossi's Mon v1.24 on Fish Disk 310 is a Freeware interactive monitor and disassembler. It is not, as

Turn Hex  
gibberish  
into  
mnemonic  
gibbersh  
with Mon

```
Workbench Screen
Amiga Monitor v1.24
First segment at $002078A8
-> sl
Segment list:
# startloc endloc length
0 $002078A8 $002078C7 32
-> m $002078A8 $002078C7
002078A8: 4280 207C 002078BC 323C0005 D0505341 'B, l. x'2<..0XSA'
002078B8: 66FA4E75 00020004 00060000 000A4E71 'f0Nu.....Nq'
-> d $002078A8 $002078C7
002078A8 4280 clr.l d0
002078AA 207C movea.l #$2078BC,a0
002078B0 323C move.w #$0005,d1
002078B4 D058 add.l <a0>+ ,d0
002078B6 5341 subq.w #1,d1
002078B8 66FA bne.s $2078B4
002078BA 4E75 rts
002078BC 0002 ori.b #$04,d2
002078C0 0006 ori.b #$08,d6
002078C4 000A ???
002078C6 4E71 nop
-> r
PC=002078A8 CCR=04 X=0 N=0 Z=1 V=0 C=0
D0=00000001 D1=00000000 D2=00000000 D3=00000000
D4=00000000 D5=00000000 D6=00000000 D7=00000000
A0=002078C6 A1=00000000 A2=00000000 A3=00000000
A4=00000000 A5=00000000 A6=00000000 A7=0026C3C8
002078A8 4280 clr.l d0
-> |
```



► yet, a symbolic debugger, which means that it won't use any labels you stored in the executable program at linkage time.

A symbolic debugger is really a necessity for large programs, unless calculating a lot of hexadecimal offsets makes you happy. But everyone writes their code in small, easily-tested subroutines, so it's not a problem.

Whaddaya mean you don't use small, easily-tested subroutines? Pah – a plague of soft-boiled Minogue CDs to rain down on you.

Like all machine code monitors, Mon allows you to set breakpoints, and assign values to registers, before executing your code. The monitor stops at a breakpoint and displays all the registers and the next instruction.

If you're really not sure of your program you can walk (single-step) through every instruction. It would be tedious to walk through a ROM routine – they tend to be large and fairly incomprehensible – so Mon can execute a library routine and then stop with the results immediately afterwards.

You can guarantee that if your program decides to run off into the sunset, you've made a mistake in a conditional instruction somewhere. Mon is able to execute code at full speed then stand on its nose as soon as it hits a conditional instruction. This makes debugging almost enjoyable.

If you find a rogue instruction in your code you don't need to edit the hex to replace it. Mon contains a line assembler, which will assemble single instructions entered at the prompt.

**T**HERE are a few little utility routines to make your day more pleasant. Apart from the usual memory allocation ones, there is a play (chip) memory command to check any samples. Disk blocks can be read, written and checksummed, so it's possible to write custom bootblocks directly from Mon.

I will state now that no representative of Finland has ever paid me to say very complimentary things about Finnish software. Though if they want to start, I'm not going to complain. Mon is a Finnish product,

and it really is deeply satisfying to use. But then, you'd expect that from a country which had the intelligence to invent the greatest invention since the wheel, the sauna.

Right – those are the basic tools you'll need. To get into programming the Amiga, you'll also need one or two books, and a linker library file. Can't help you with the first field (techie books ain't PD, y'know) but the second is a little easier.

The proper Include files belong to Commodore, and they still believe in keeping Amiga programming out of the hands of the masses. We'll have to make do with a library that just defines where all the system routines live in each library.

Commodore supply Function Definition files with on the Extras

disk, which actually contain enough information to build such a linker library. There isn't the space here to describe how to do it.

Alternatively, if you look in the Sozobon ZC archive on Fish Disk 314, not only will you find A68k and Blink – complete with documentation – but you'll also find Ami.lib. This file is a linker library containing, among other things, all the library routines' positions.

So Fish Disks 310 and 314 contain all the tools you really need for the Build Your Own Assembly Language Development Kit. If you have an unexpanded machine, you may need to find someone with more memory to unpack the big archive on Disk 314. Once unpacked, the programs work just fine with 512k.

## Oops – Include me out...

**B**EFORE you start thinking that I'm going to rabbit on about Object Orientated Programming, I'm not. Heck, my idea of structured programming is putting a REM statement full of asterisks above all the GOTOs.

Nope, the tone here is of deep apology. Remember a while back I told the world at large that NorthC was the best thing, toasters notwithstanding, since sliced bread? Well, there's a better C compiler out there that I missed, but this one's not without its drawbacks either.

ZC on Fish Disk 314 is a very nearly complete C compiler system. It has a Unix-style "cc" front end, a Make utility, an optimiser, an assembler and a linker. As it stands, you can compile and run programs which use simple CLI I/O, with no floating point.

NorthC could do that too, but its printf() routine was so slow you could see the characters appearing like an ancient 300 baud modem. NorthC could work with floating point numbers, but couldn't output them. The much swifter ZC is quite happy outputting floating point numbers, but doesn't have the support files to work with them.

The ZC documentation cheerily

tells everyone to send \$20 to Commodore in the US, who'll send the 1.3 Developer Upgrade pack by return of post. This wonderful package contains everything you need to flip the helpless ZC tortoise back on to its feet.

There's just one sandfly in the Savlon, though: Commodore UK do not sell the 1.3 Developer Upgrade pack to non-developers. It costs at least £75 to become the lowest form of developer, and you'll probably have bought an expensive compiler before considering that move.

Commodore do not allow the distribution of their Include files – the things that compilers and assemblers need – unless it's by a Commercial Developer. It's a case of the old greedhead "Need money to make money" vicious circle that I, for one, want no part of. Copying Include files off your mates is theft, another thing I'm not into.

I guess I'd better give my Tirade Launcher a rest now, lest I start to sound like some lowlife student politico. But I have met registered developers whose opinion of the technical support available in the UK is on a par with the sensation of finding damp chewing gum under a desk. Worse still, it's still warm.



# What are words worth?

THE special on word processors in the August and September issues of *Amiga Computing* may have overlooked an option now more widely considered – the public domain solution.

## I Edit, Uedit

**B**y the Walker standard definition, a text editor becomes a word processor when it has a print facility. By the revised Russell-Walker definition, the text editor must be able to print and wordwrap to earn the coveted Magimix des Mots d'Or.

Uedit easily qualifies for that title. Although designed as an efficient text editor, it has slowly evolved to become quite a powerful word processor. It is also a wonderful example of Shareware in action.


Uedit has undergone at least five revisions, all of them at the behest of its users. It costs between \$48 and \$103 to buy the newest Uedit, the lower price representing the fully-configurable Uedit with on-disk documentation.

The upper price, which is still under £60, will buy you a spell-checking, low level programmable, Wordstar VI, and Gold Key emulating Uedit, complete with neatly bound printed user manual. The spelling checker dictionary will be American, but that's no crime considering that current thought has it that American English spelling is more correct than English English.

The shareware Uedit has most of the features you could ever ask for in a text engine, save for spelling check. It has particularly good formatting facilities, allowing multi-column text, and fully adjustable margins, headers and footers.

Speedwise, Uedit is up there with the best. Scrolling is particularly speedy – the longer you hold the cursor key, the faster it gets, right up to a full-speed hardware vertical scroll. Lovely stuff.

But there are some slightly odd things about Uedit which may not endear you to it. First, it assumes you have a US keyboard, which mean your hashes come out quoted if you don't have that keyboard. Most UK people



((See Uedit-Policy for purchasing info.))

\*\*\*\* DISCLAIMER \*\*\*\*  
I can accept no responsibility, if you crash your Amiga or lose text files with Uedit. No guarantees, either explicit or implied, are made as to Uedit's safety. If you use it, it is at your own risk.  
\*\*\*\* \*\*\*\*\* \*\*\*\*

Dear folks,

((See Getting Started, below, for immediate instructions.))

Uedit is an editor for technical users. It has many wordprocessing features.

In developing and enhancing Uedit, the aims have been for the user to:

- o Be able to work without bumping into limits of power and capacity;
- o Be able to automate repetitive work, eliminate tedium, save time;
- o Be rid of the irritation of wasted keystrokes and stodgy performance;
- o Be able to customize the environment fully;
- o Be able to create, on the spot, new capabilities that are needed.

Uedit is Shareware. You can get a copy from a friend or off a computer network and try it out, in order to decide whether to purchase the real thing

*Half-editor, half-Workbench, Uedit stalks the streets*

don't have that keyboard.

Secondly, Uedit uses the secondary cursor keys, that being the numeric keypad. Dunno about you, but I use the keypad a lot, so I'm not too keen here. The "real" cursor keys are used to shunt the displayed area around, but not the cursor.

A neat trick of Uedit's that even still I'm not sure how it manages, is that it can double as a second Workbench screen. You can open windows on it and run programs, but the other Workbench is still available. Never found it to be much use myself, but someone might.

The latest full shareware distribution of Uedit was on Fred Fish Disk 286, with an updated main program of Fish 301. You'll need Disk 286 even if you have a look at the update, but 286 alone should be enough to see whether you like Uedit and are willing to pay for it.

The really neat thing about registering Uedit is that you get a personalised version of the Shareware program. If you spread this version and others register after seeing your Shareware Uedit, you earn \$15 commission. Definitely Share and Enjoy.

## Wordwright for right words

**I**n all the thousands of PD disks there's only one program which bills itself as a wordprocessor. It's called Wordwright, and has some utterly unique features.

Wordwright is a old program by Amiga standards (1986) but even then, some features have never been bettered. Its most useful feature is a built in text-outliner which works in a rather clever way.

Outlining a piece of work before you start writing it is one of these disciplines (like touch-typing) that

everyone says is A Good Thing but few people ever get round to doing. Wordwright makes it so easy that it's almost more bother not to outline.

All you need do is type in your headings, and then highlight them. After that, you "expand" each heading in turn, write your spiel, and then "collapse" the section. This hides the section text, leaving only the heading showing.

That means that a 20 page document could occupy just 20 lines, each





heading expandable to a full page. Each of these sections could have any number of subsections, each expandable to any size you want.

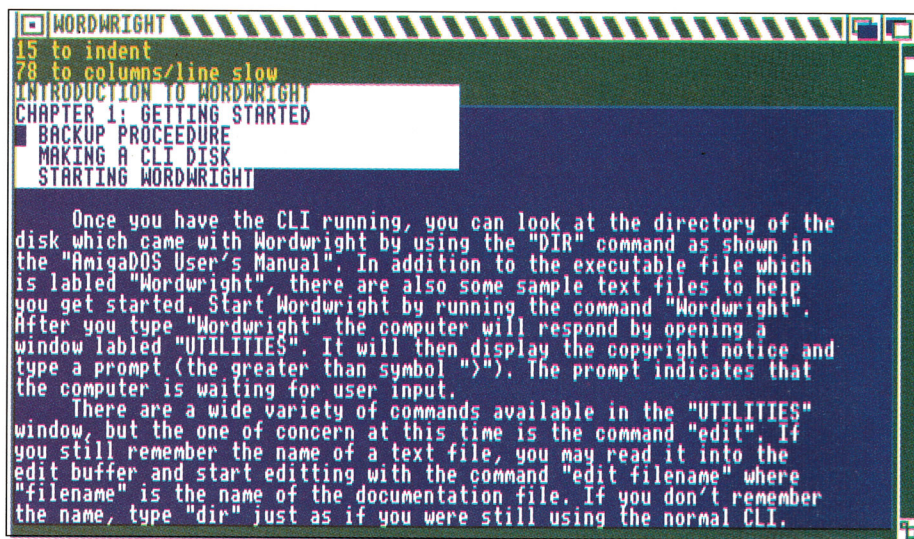
This setup would be little more than a neat feature without Wordwright's index generation facility. Put a *Contents* command at the end of the document, and when printed out it will have a contents page indexed by the headings you defined.

Wordwright has quite a powerful mailmerge facility. Now you can send thousands of really sincere letters to people you've never met.

I once tried to use mailmerge to write job applications. I got no interviews. Mail Merge – it really screws you up.

Wordwright is pretty quick, with reasonable documentation and good help facilities. It has menus to duplicate the most common commands, but you will need to skip into command mode for a few functions.

The oddest thing about Wordwright is its proportional gadget on the right



*Wordwright? No, the spelling's wrong...*

hand side of the screen. These are meant to display the size of the current screen in relation to the current document.

Wordwright uses the gadget to indicate how large the text is in 32k lumps. Thus the gadget is not proportional, and isn't really a useful aid to moving through the text.

It's possible to exit Wordwright without being told about modified text. This is a major oversight, and one which could lose you an entire document. If you're careful, though, it should never bother you.

You can find it on the EMPDL and KADSoft Home Utilities disks, or on Panorama Disk 48.

# DME – It's the one for me

**I** USE at least three different text editors/wordprocessors, and all have completely different control keys. Pressing the key for "Move to End" on one produces a square bracket on the others. The keys for "Save Document"

on one is the same as the Search key combination on another. And none of these combinations is exactly the way I'd want it.

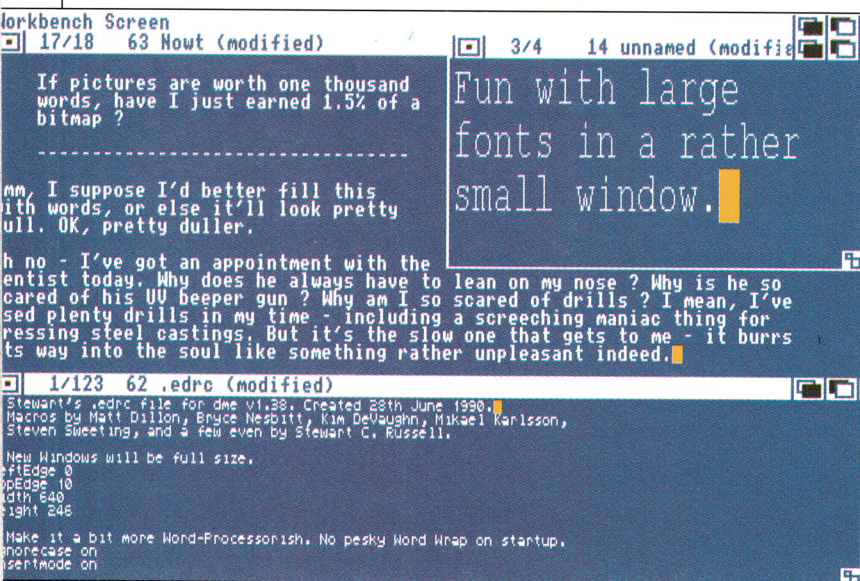
So I would like a wordprocessor that, no matter which set of keys I

pressed, it would know what I meant. I would also like a word processor that ran like greased lightning on overtime. Oh yeah, and can converse with ARExx into the bargain.

I have found that word processor. It is by nature a programmer's text editor, which warns that "it has not been designed for user friendliness". It's called DME, it's Freeware, and v1.38 lives on Fish Disk 284.

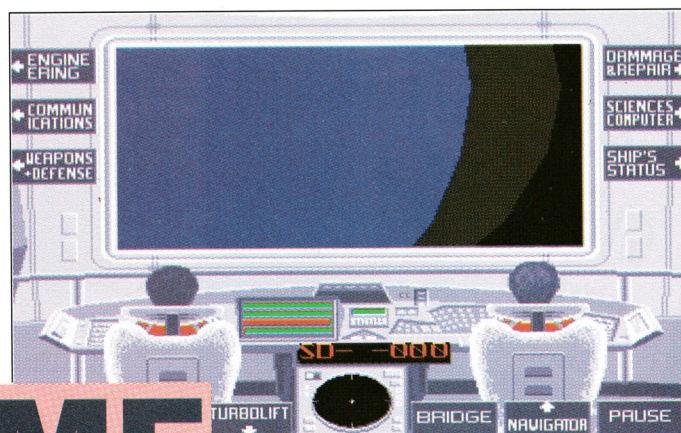
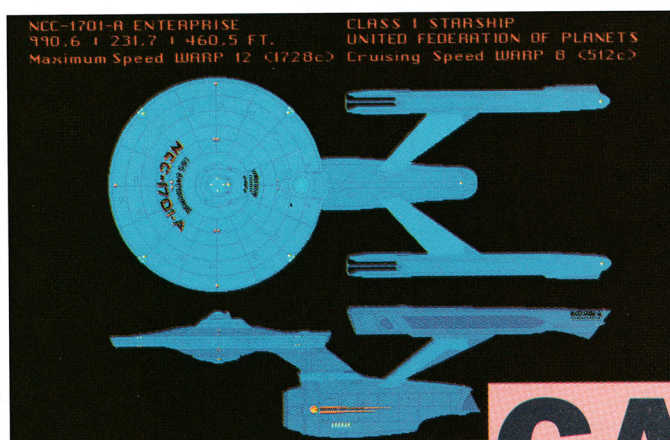
DME is the text editor that Matt Dillon wrote when he discovered that there wasn't a reasonable programmer's editor for the Amiga. Matt Dillon is possibly the most prolific writer of freely distributable Amiga software, with at least 35 titles in the Fish collection, ranging from small hacks to complete network communication systems.

DME relies on a configuration file to read in the key definitions. Any printing key or mouse button can be redefined to do anything at all. And with DME's macro programming



*DME: Lots of fun with lots of fonts*





# GAME OF THE MONTH

## Star Trek

**C**AST your minds back a bit and you may remember a Scandinavian Star Trek which wasn't half bad. If you don't remember it, tough, but don't forget to reel your mind back in.

Some people in high places like Star Trek. All the Space Shuttles were named after Trek ships, and it is now correct American to say "To boldly go". Sheesh – if a low budget B-series like Star Trek can influence the American people, that explains a lot.

Tobias "AgaTron" Richter likes Star Trek, and has done a rather nice little game based on Star Trek – The Next Generation. When I say little, I meant only takes up two

disks, and really likes at least a megabyte of RAM. There is a littler version which will run in 512k, but you sacrifice most of the sound.

Tobias has spent a lot of time with a sampler getting the noises just right. All your favourite Trek sounds are there, timed just the way you'd

expect. Most of the game is spent managing the Enterprise's affairs, dealing with attacks and fulfilling missions. That's quite enough to be going on with, since the Enterprise has all the reliability of an Edsel. Scotty (with that marvellous Irish accent of his) would be shocked.

The graphics are neat in extremis, but the gameplay is a bit too deep for me. Everyone keeps telling me how good it is, so far be it from me to disagree.

Star Trek is available from primarily from George Thompson Services, but other libraries should have it. It's "Worthware" – you send Tobias what you think it's worth. Rotten fish will not be appreciated.

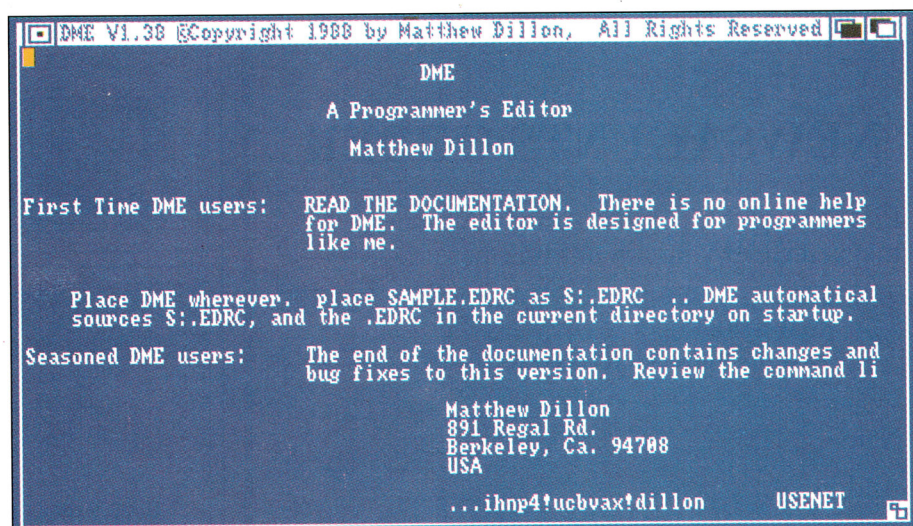
language, anything is possible.

As shipped, DME is a rather basic text-editor – no menus, no print command, no global find-replace and no paragraph reformatting. But if you have a penchant for simple programming, you can configure DME to your exact specification.

DME can open as many documents as you have memory for the text and the windows. You can cut and paste between them, and each window can have a different (fixed-pitch) font. These fonts are only for the screen – if you create a print command – via SaveAs PRT: – it will only use your printer's standard font.

The program automatically searches for configuration files in current work directories, so the DME configuration you use for writing C programs can be totally different from the one you use to write purple prose.

DME writes an icon with the Save file if you started the program from



One of the first uses you can put DME to: Reading its own doc file

Workbench, but doesn't if it was started from the CLI – a neat touch.

If you like messing about with configuration files and want a zero wait-state text engine, DME is the

business. I'd look elsewhere if you don't like staring the CLI in the eye. If I have to give it further recommendation, it's the editor I now use for all my writing.



# 3 GREAT EASY-TO-ENTER TELEPHONE CONTESTS

**POT £250\***  
**GIVE US A BREAK**  
 with Dave Lee Travis  
 Play Radio 1's  
 Snooker Game




Answer trivia questions to pocket the cash prize!

**0898 333 477**  
\*This month. A tie-breaker answer is required

**TELLE ADDICTS**  
© BBC 1989


ANSWER T.V. TRIVIA  
 QUESTIONS AND WIN  
**£250\***



Play Telly Addicts with Noel Edmonds Dial

**0898 333 479**  
\*This month. A tie-breaker answer is required  
 T.V. Format devised by John King.

**SOAP**  
**- trivia -**  
 Win £100 cash! \*  
 + 5 runners up of £10

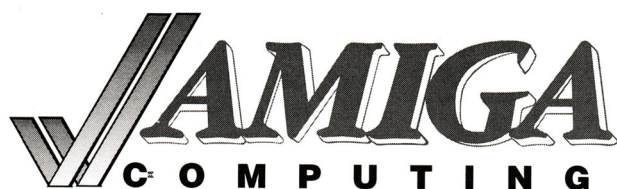


Answer questions on  
 Coronation Street,  
 Eastenders,  
 Neighbours or  
 Home and Away  
 and you could  
 win £100.

**0898 333 478**  
\* this month

*Pick up your phone  
 -and play it today!*

Calls cost 33p per min cheap, 44p per min at all other times. Legion Telecom Ltd. PO Box 180 Guildford.



## NEWSAGENTS ORDER

Please reserve a copy of Amiga Computing magazine every month until further notice

- ☐ I will collect  
☐ I would like it delivered to my home

Name.....

Address.....

.....

..... Postcode .....

Note to Newsagent: Amiga Computing should be available from your local wholesaler. If not contact Carolyn Wood on 0625 878888

## MAKE YOUR AMIGA EARN!

Yes making money with your Amiga becomes incidental when you know how. Your micro is, if only you knew it, a gold mine. The size and make is irrelevant. Make the initial effort. **NOW** by starting your own **HOME BASED BUSINESS.**

*This may be the most important move you will ever make!*

**REMEMBER:** You'll never get rich by digging someone else's "ditch". Anyone in the country, including YOU, can become very rich in a relatively short period of time just by doing a few basic things! It's more rewarding than playing games. The benefits are many and varied, Full or part time. For **FREE** details send S.A.E. to:



## HOME BASED BUSINESS

31 PILTON PLACE (AM19)  
 KING AND QUEEN STREET  
 WALWORTH, LONDON SE17 1DR

## AMIGA DTP

### AT LAST ... A POSTSCRIPT LASER BUREAU FOR AMIGA USERS!

Simply mail us your Professional Page/PageStream DTP files or your word-processor ascii files, on floppy disc for professional quality postscript laser output by return post.

- ☐ High-res scanning service also available (IFF format)  
☐ Ring for large order discounts or more information.  
☐ Only £1.25 per page. (Minimum order 5 pages.)

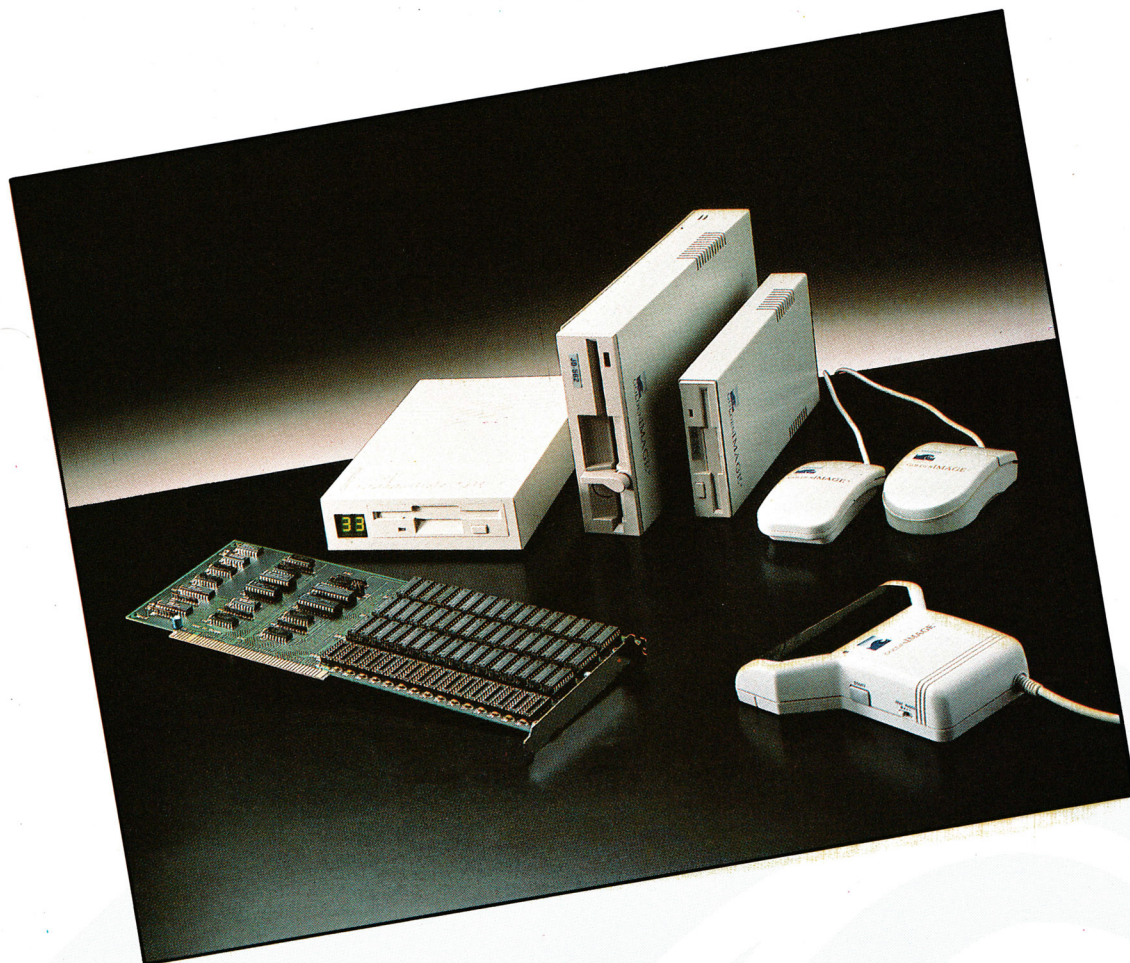
**COMPUVISION 0642-850759**

2A OXFORD RD, MIDDLESBROUGH, CLEVELAND TS5 5TD





# GOLDENIMAGE®



**GOLDENIMAGE** *the first and last name for computer addons.*

## **THE RANGE**

Mouse  
Optical Mouse  
Scanner  
External Floppy disk drives  
RAM expansion cards  
External hard disks

Quality Peripherals for  
Atari ST  
Commodore Amiga  
Toshiba Laptops  
Amstrad  
And all IBM Compatible PC's

TOSHIBA-ATARI-COMMODORE-IBM-AMSTRAD are registered trademarks of their owners.  
PHONE FOR NEAREST DEALER

**Golden Image House**  
**Fairways Business Park, Lammas Road, Leyton, London E10 7QT**  
**TEL: 081 518 7373 FAX: 081 518 7585**



# Diamond Computers

**\*\* Call your local branch now! \*\***

**Southampton (0703) 232777 Poole (0202) 716226 Midlands (0926) 312155  
London 081-597 8851 Bristol (0272) 693545 Manchester coming soon!  
Southern Ireland 061-376744**



## **Diamond's Screen Gems!**

**AMIGA 500 computer with all the following!**

Shadow Of The Beast II, Days Of Thunder, Back To The Future II, Night Breed, Deluxe Paint II, Datastorm, Dungeon Quest, E-Motion, Grand Monster Slam, Kid Gloves, Chessplayer, RVF Honda, Shufflepuck Cafe, Microprose Soccer, Rick Dangerous + 100 PD Programs & a Joystick!  
Special bonus: Two mystery games!

All for **£399** including VAT

## **Diamond's Flight Of Fantasy!**

**AMIGA 500 computer with all the following!**

F29 Retaliator, Rainbow Islands, Escape From The Planet Of The Robot Monsters, Deluxe Paint II, Datastorm, Dungeon Quest, E-Motion, Grand Monster Slam, Kid Gloves, Chessplayer, RVF Honda, Shufflepuck Cafe, Microprose Soccer, Rick Dangerous + 100 PD Programs & a Joystick!  
Special bonus: Two mystery games!

All for **£399** including VAT



## **Diamond's Flight Of Fantasy 2!**

**AMIGA 500 computer with all the following!**

F29 Retaliator, Rainbow Islands, Escape From The Planet Of The Robot Monsters, Deluxe Paint II, Blood Money, Menace, Ballistix, Total Eclipse, Dark Side, Clown-o-mania, Table Tennis, Saint & Greavsie, BAAL, Paperboy, Netherworld + 100 PD Programs & a Joystick!

All for **£399** including VAT



## **Commodore A590**

**20Mb Hard disk with 2Mb memory on board for the AMIGA 500**

**New give away price  
£299!**





## **Diamond's Screen Gems 2!**

**AMIGA 500 computer with all the following!**

Shadow Of The Beast II, Back To The Future II, Night Breed, Days Of Thunder, Deluxe Paint II, Blood Money, Menace, Ballistix, Total Eclipse, Dark Side, Clown-o-mania, Table Tennis, Saint & Greavsie, BAAL, Paperboy, Netherworld + 100 PD Programs & a Joystick!

**£399**

All for

including VAT

## **Class Of 90's AMIGA 500 Education Pack**

**Includes:**

Deluxe Paint II, Superbase Personal, Maxiplan, Publisher's Choice, Dr. T's Midi Recording & Interface, Amiga Logo, BBC Emulator & programs, 10 blank disks + case & TV Modulator

**£P.O.A.**  
**Please call.**

## **First Steps AMIGA 500 Education Pack**

**Includes:**

Deluxe Paint II, Deluxe Print II, Pro Write 2.5, Infofile, Music Mouse, Let's Spell at Home, Amiga Logo with Talking Turtle, BBC Emulator, TV Modulator, 0.5 Meg Upgrade!

**£P.O.A.**  
**Please call.**

**Only while  
stocks last!!**

**Stop Press!!!**

**Special  
Buy!**

**AMIGA 500 computers from only**  
**£259**

**Ring your nearest branch to order yours before it's too late!**

**Okimate 20**  
**High Quality**  
**24-pin colour printer**

**£149.95**

including VAT, delivery,  
start-up disk,  
two ribbons & paper!

**AMIGA**  
**external**  
**drive**

with thru-port &  
on-off switch!

**£49.95**

including VAT



# Diamond are a Premier Commodore Dealer



## The AMIGA 3000

**AMIGA 3000 - 16 - 40**

16Mhz clock speed with 40Mb hard disk

**£P.O.A.**

**AMIGA 3000 - 25 - 40**

25Mhz clock speed with 40Mb hard disk

**£P.O.A.**

**AMIGA 3000 - 25 - 100**

25Mhz clock speed with 100Mb hard disk

**£P.O.A.**

Part exchange your AMIGA 2000 for an  
AMIGA 3000 - 25 - 100 and pay  
as little as **£1899**

## The AMIGA 2000

Call for prices of your 2000  
system.

Part exchange your existing  
AMIGA 500 system and get an  
AMIGA 2000 from

**£499** including VAT

Full range of peripherals  
stocked – call for prices &  
advise.



*Call our expert sales team on your local number!*



## The New Philips 8833 II

**£199**

**with on-site maintenance**

### Video from Diamond

Colourpic – **£499** inc VAT

Digiview v4 – **£99**

Vidichrome – **£99** inc VAT

Mono camera – **£199** inc VAT

RGB splitter – **£69.95** inc VAT

Deluxe Video 3 – **£79.95** inc VAT

Fantavision – **£14.95**

### DTP

Pagestream v1.8 – **£109**

Professional Page v1.31 – **£159**

Pagesetter II – **£59.95** inc VAT

DISKS inc VAT

3.5"

1-24

25-49

50-99

100-199

200+

**50p** each

**48p** each

**45p** each

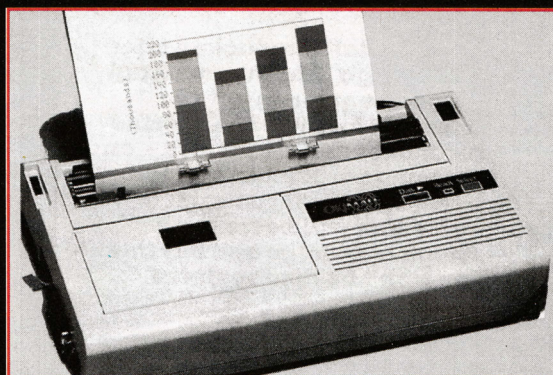
**43p** each

**40p** each

**Full range of  
books available!  
Please call**



**Okimate 20**  
**24-pin colour printer**  
 just **£149.95** inc VAT  
 with startup-disk, paper,  
 lead & two ribbons



## ***Diamond - Memory Expansion Specialists***

New Low Price!

**AMIGA 500 half meg upgrade**

**£29.95** including VAT

or £39.95 inc VAT with Comicsetter, Spritz Paint or Fantavision

Exclusive to Diamond

**AMIGA 500 8Mb ram board with 2Mb populated**

Easy to install – fits under your computer in the trap door!

**£149.95** including VAT

**AMIGA**  
**external**  
**drive**

**£49.95**

including  
 VAT

### ***Printers***

Citizen Swift 24	<b>£234</b>
Philips NMS1432	<b>£99</b>
Canon Bubblejet	<b>£438</b>
Star LC10	<b>£118</b>
Star LC10 colour	<b>£154</b>
Star LC24/10	<b>£188</b>
Star XB24/10 colour	<b>£364</b>
Panasonic KXP1124	<b>£194</b>
HP Deskjet 500	<b>£449</b>
HP Paintjet	<b>£699</b>
Citizen 120D	<b>£102</b>
Epson LX-400	<b>£121</b>
Epson LX-850	<b>£168</b>
Epson LQ-550	<b>£249</b>
Okimate 20	<b>£130</b>

### ***Monitors***

Philips 8833 (UK)	
colour stereo monitor –	<b>£199</b>
Commodore 1084S	
colour stereo monitor –	<b>£189</b>
New Commodore 1084SD –	<b>£209</b>
Diamond Multisync 2 –	<b>£295</b>
Diamond Multisync 3D	
Super VGA 1024 x 768 –	<b>£379</b>
NEC colour monitor (for BBC B	
& Master, C64, Amstrad PPC,	
IBM PC)	

## ***HOW TO ORDER:***

Phone through with your Access or Visa card, or send a cheque or P.O. to your local branch.

Diamond Computer Systems Ltd., 84 Lodge Road, Southampton, SO2 2QS.

Diamond Computer Systems Ltd., 406 Ashley Road, Upper Parkstone, Poole, Dorset, BH14 0AA.

LHC Microsales, 121 Regents St., Leamington Spa, Warwickshire.

LAN Computer Systems Ltd., 1045 High Road, Chadwell Heath, Romford, Essex.

Diamond Computer Systems Ltd., 227 Filton Avenue, Horfield, Bristol.

Diamond Computer Systems Ltd., Manchester. – Coming soon!

Diamond Computer Systems Ltd., Ballina, Killaloe, Co. Clare, Eire.

Southampton (0703) 232777

Poole (0202) 716227

Midlands (0926) 312155

London 081-597 8851

Bristol (0272) 693545

Eire 061-376740

**All prices exclude VAT unless otherwise stated. Courier delivery £7.50.**  
**Next day service £10. E&OE. All prices correct at time of going to press**  
**and subject to change without notice.**



# 17 Bit Software

*That Bit Better Than The Rest!!*

**P0 Box 97, Wakefield WF1 1XX, England. ☎ 0924 366982**

*The UK's Largest Amiga Only PD User Group, over 1,000 Top Quality Public Domain Disks and over 16,500 members in our friendly club!!*

## **PACK ATTACK!!**

*ALL These packs give lifetime memberships to 17-BIT.*

*And open up a whole new world in Public Domain.*

### **CLASSICAL MUSIC PACK**

*Three superb music disks, and a catalogue. Brilliant value at only £6.50*

### **MUSIC CREATION PACK**

*5 music disks to help you get the best out of your AMIGA sound system. Included disks are 740 MED V2.01.*

**440 SOUNDTRACKER RIPPERS AND PLAY ROUTINES.**

**482 GAMES MUSIC CREATOR. 478 SOUND MON. AND DISK**

**479 SAMPLED INSTRUMENTS FOR ALL THE ABOVE**

**DISKS. SUPERB VALUE AT ONLY £7.99**

### **QS+CD**

*The ever popular QS+CD pack is a superb way to get into public domain. Featuring great utilities, great music and great games. If you're new to the AMIGA this is the pack!!!*

**ONLY £6.50**

### **ASTRONOMY PACK Only £5.00**

*A 3 Disk pack including the latest catalogue, and 2 superb astronomy disks.*

**173 AMIGAZER**

**223 STAR CHART** *A fine astronomy program.*

## **MEGA DOS**

*Mega Dos is an AMIGADOS Manual-on-disk designed to be an easy to use self help reference and tutorial for understanding the CLI and workbench.*

**MEGA DOS IS NOT PD AND IS ONLY AVAILABLE FROM 17-BIT SOFTWARE.**

*Amazing value at only £6.95*

### **WE ALSO STOCK**

**FISH-1 TO 360**

**AMICUS-1 TO 26**

**AMIGAN-1 TO 23**

**T-BAG-1 TO 42**

*All these including the whole range of PD in our library are only £2.00 EACH*

### **17-BIT SOFTWARE ARE OPEN**

From 9.00am to 8.00pm Mon to Friday and 9.00am to 5.30pm on Saturdays.

We take all major credit card orders over the phone. **TEL: 0924 366982**

Postal orders and cheques should be made payable to 17-bit software.

10 disks are £18.00 or any one disk £2.00

## **ESSENTIAL PD FROM OUR LATEST DISKS**

- 747 - Sculpt 3D Fighter animation by John Smith
- 746 - Excellent commercial quality PD shoot em up!!
- 745 - DEXION Freddy demo, very original
- 743 - MIRAGE Prime 90 mega demo (Lovely font)
- 741 - Intro's 47, more specially compiled demo's
- 740 - Nic Cusworths MAD MAD MAD MAD mix!!!
- 736 - Agatron star trek slide show (very nice)
- 735 - Agatron animations disk no 34
- 734 - Agatron animations disk no 33
- 733 - SCOOPEX beast music demo (absolutely brill!!!)
- 731 - Sidney and Friends utility disk (great utils)
- 730 - Beatle mania, 34 SONIX beatles tracks (great)
- 728 - Two disk Laurel and Hardy disk as featured
- 729 - In COMMODORE USER (great fun)
- 727 - Gary Tower ray traced slide show (only available from 17-BIT SOFTWARE)
- 726 - intro's 46 More lovely demo's to impress
- 724 - intro's 45 Do these demo's ever run out?.....NO!
- 723 - intro's 44 More specially compiled graphics
- 722 - AMAZE music disk with 56 tunes in all, and a long play feature. (THIS IS TRULY AMAZING.)
- 721 - DISORDER Mega demo, great music and graphics
- 719 - SYNTHIA 2 Music util demo (GREAT FUN)
- 718 - Fractal slideshow. (Yummy graphics)
- 717 - CASP, music disk (the guy responsible for the batdance remix in our library, 4 more super tunes)
- 714 - RED SECTOR Martin Galway music disk
- 710 - BUDBRAIN DEMO (outrageously funny disk)
- 687 - CRIONICS MEGA DEMO, featuring the best anim. I've ever seen (of madonna walking). GREAT
- 681 - WARFALCONS MEGA DEMO (stunning)
- 684 - FRACTAL FLIGHT demo
- 685 - KEFRENS music juke box (don't miss this one)
- 688 - Horror slide show (SPOOKY!!!!)
- 696 - DEPECHE MODE music disk (GREAT STUFF)

## **ZYDEC RAM EXPANSION**

*Upgrade your Amiga 500 to 1 Meg, of Memory with the Zydec 512K expansion. Fitting neatly into your Amiga this compact unit comes complete with a One year guarantee and an on off switch.*

**ONLY £32.95!!**

**Or £39.95 with special 5 disk 1 Meg PD pack!!!**

**DON'T DELAY ORDER A PACK TODAY!!!**



If you have ever described how you digitise images in colour to non-computing friends, you may have stared at a few disbelieving faces.

"What", they say, "you hold up pieces of coloured plastic in front of the camera? Are you serious?"

"Erm....yes", you say, "and it works really well!"

But it's too late. You have lost their respect. No longer are you a computing genius, you have become a crank, a mad professor, a nutter in an anorak.

If you are afraid of this happening to you then rest easy: Modern technology has come to your rescue. In actual fact, the solution was always there, it was just that it was too expensive to consider. But first things first.

As we have said on many occasions, to grab a picture in colour you must grab the red, green and blue portions of the image separately. Once the computer knows the amount of each primary colour in each picture, it knows just the amount of colour to add to each pixel in the display. Result: A full colour image.

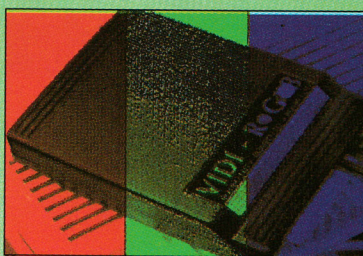
The sensible way to split the image into its RGB components is to use some electronics. What is needed is a Black Box with a video signal bunged in at one end, a switch on the top to choose the colour, and a separated signal out the other.

This is what VIDI RGB does. And it's black too.

Although mentioned in passing as part of last month's digitising spectacular, we reckon it deserves a bit more recognition. Frankly, a splitter this cheap is something that will cause several people to perform a double-take anyway.

Assuming you have the VIDI Frame grabber, colour digitising is a fully

# Split ends



*Sick of pieces of coloured plastic? Yearning for a hi-tech video solution? Rombo could have just what you're looking for, as John Kennedy discovers*

automatic process. Just hit a key, and the three images are grabbed, processed and displayed in a few seconds. With decent lighting and a cheap camcorder the results are pretty darn good. Marginally better than with coloured plastic, but without all the hassle.

With any other digitiser – frame grabbing or not – you must use the splitter in manual mode. A multi-coloured LED on top of the box indicates which colour is currently being let through.

If it's white, then no colours are being filtered out – the image is the untouched original. A press on the button and the LED turns red. Now only the red component is being let through. Another press and the LED turns green. One more press and it's yellow. Yellow? Well, it would be blue but blue LEDs are a bit tricky to get hold of. Rest assured that the video signal component is totally blue.

Expansion-minded folk will be interested in the special "feature

connector". As well as various control signals and power lines, there is full support for the S-VHS (or "super VHS" – an improved quality video standard) system. This should ensure some degree of future-proofing VIDI RGB.

Furthermore, there are some things which simply can't be done without a video splitter. For example, the new Still Video machines are very exciting, but at the moment getting the image on to an Amiga is a bit tricky.

With a splitter it is possible to digitise the image in colour at a resolution only limited by your grabbing hardware. The same goes for grabbing a video taped image in colour. Unless you can electronically split the signal, you're stuck with a mono image.

If you need a splitter for a specific purpose, then you can't go wrong with VIDI RGB. Even if you think you would like a splitter, just to do away with the coloured plastic, you would still be making a wise move.

## REPORT CARD

### VIDI RGB

Rombo Productions Tel: 0506 414631  
£69.95

### EASE OF USE ...



Simply press a button to choose the image colour. When using VIDI, even this arduous task is removed.

### VALUE.....

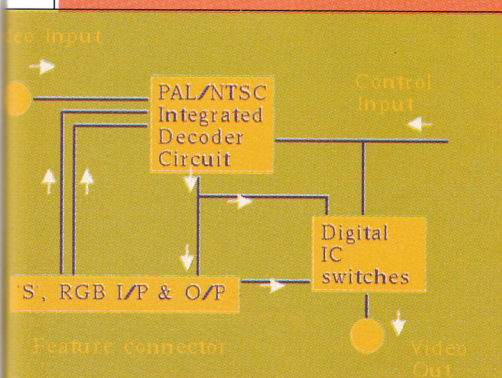


Video splitters are rare. Affordable ones rarer still.

### OVERALL

80%

A useful – sometimes essential – addition to your digitising setup, at a price which isn't prohibitive.



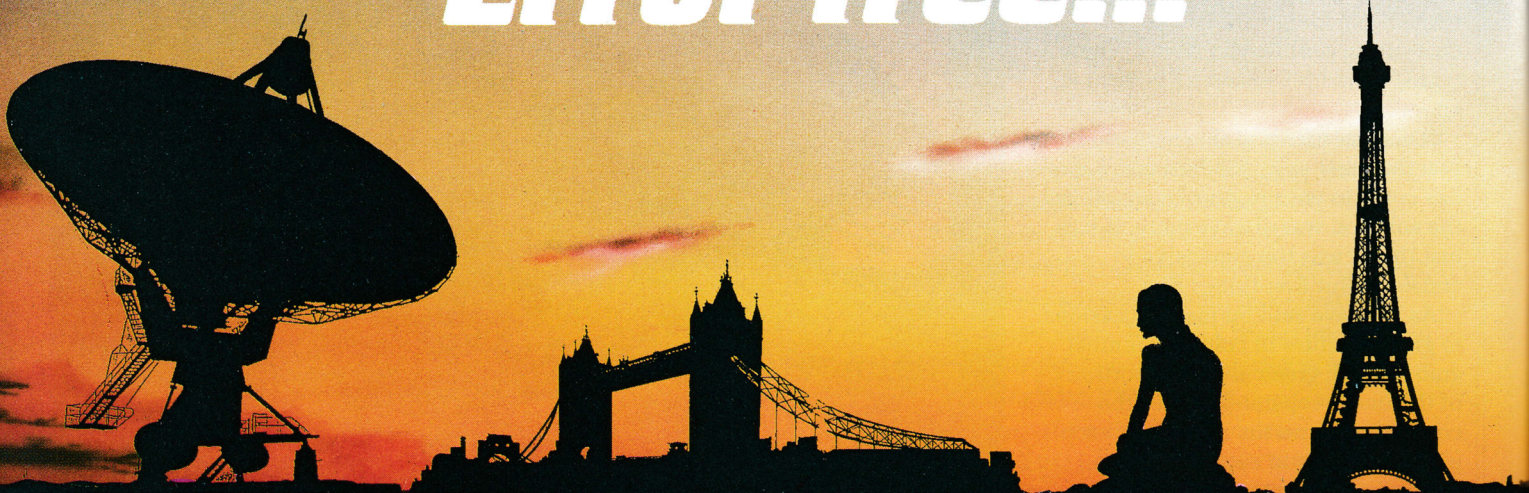
VIDI RGB block diagram



An image taken directly from video tape



# Low-cost... High-speed... Error-free...



## This is what the EuroLink package offers . .

- ★ Fully automatic operation – you don't need any prior knowledge
- ★ A multi-speed modem – 2400, 1200, 300 and 1200/75 baud, offering MNP error correction
- ★ Easy-to-use comms software
- ★ FREE registration to MicroLink\*

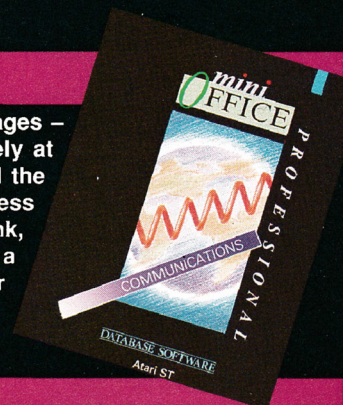
... all for  
**£299.95** VAT incl.

### THE MODEM

The EuroLink modem is a robust and sophisticated device which turns data from your Atari ST into signals which can be sent along a telephone line. It can handle speeds up to 2400 baud – about 40 words a second. Although it has many powerful features, it is simplicity itself to use when combined with its accompanying software. Built into the Hayes-compatible modem is MNP error correction – your guarantee of a corruption-free connection. Its wide range of other features include auto dial and auto answer, auto redial, baud rate scanning, auto terminal baud rate sensing, 32-entry number store, internal loudspeaker, call progress monitor, bell tinkle suppression, external plug mounted power supply unit and built-in 'watchdog' circuitry.

### THE SOFTWARE

Accompanying the modem is one of the ST's best-selling comms packages – the complete Mini Office Professional Communications. Sold separately at £24.95, it simplifies connection to MicroLink. Two mouse selections and the rest is automatic – straight to the service you require and with all the access formalities taken care of. After that you can move freely around MicroLink, capture text on disc and send pre-prepared documents – all with a minimum of keystrokes. It can also be used to access Prestel and other services in addition to MicroLink. Included in the software is a text editor and other desk accessories.



### WHAT YOU CAN DO WITH MICROLINK

With MicroLink any ST can be turned into a complete communications centre. Without any additional expenditure it becomes a telex machine, a fax machine, an electronic mail terminal.

- ★ You can use it to send a letter for next-day delivery to any address in Britain, send a telegram to anywhere in the world, or even send flowers without moving from your ST.
- ★ It's also a retrieval tool that lets you search out and store data from the world's leading electronic libraries.
- ★ It gives instant access to the credit status of many thousands of companies all over the UK... and it lets you embark on exciting adventures – in real time! – with like-minded enthusiasts in faraway places.
- ★ It keeps you up to date with the latest news, sport and weather.
- ★ It gives you free entry to a wide range of telesoftware from time saving utilities to exciting games – that you can download directly into your own ST.





**APPROVED** for connection to telecommunication systems specified in the instructions for use subject to the conditions set out in them.

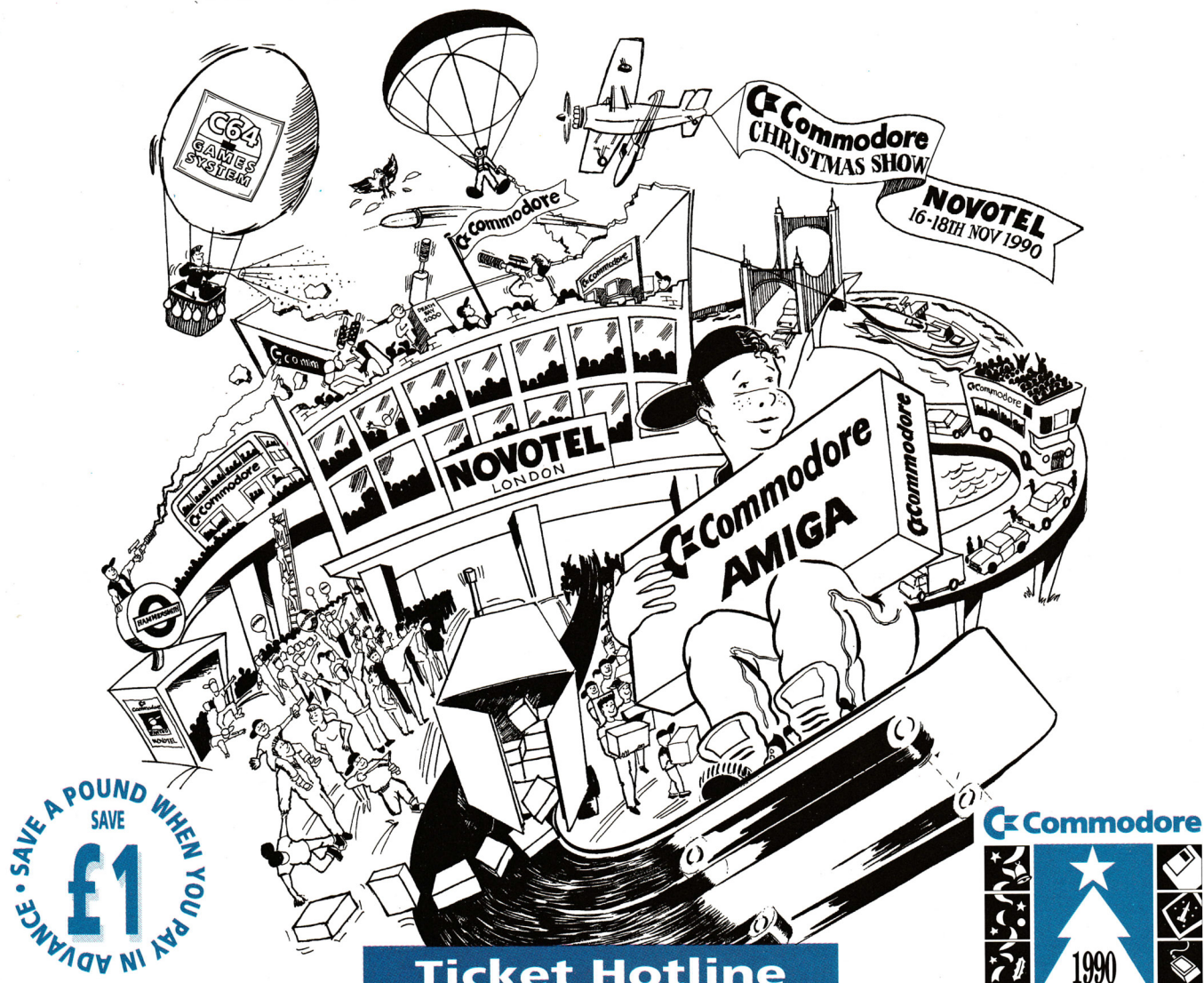
STWS



# It's big! It's loud!

## It's the Commodore Christmas Show

London Novotel • 16th-18th November 1990



**Ticket Hotline**  
**051-357 1275**

**L**ook out London, the seventh Commodore Christmas Show is in town from the 16th-18th November! Stacks of new products and over 100 exhibitors adds up to the most exciting Commodore Christmas Show ever.

All the major software houses will be there to preview their new releases for Christmas - great new Commodore games, leisure and music software for you to take away on the day!

And that's not all! The Christmas Show is your chance to experience stunning new technologies seen here for the first time.

So save yourself £1 a ticket and call the Ticket Hotline or mail the coupon from this ad before Thursday 1st November!

### The Commodore Christmas Show

Friday	16th Nov 10am-5.30pm
Saturday	17th Nov 10am-5.30pm
Sunday	18th Nov 10am-4.30pm

- Only Commodore specific show before Christmas
- Over 100 exhibitors - '000s of new products!
- Commodore Theatre and Games Arcade - masses of exciting new product launches!

#### Admission Prices

Adults	£4 in advance, £5 on the door
Children	£2 in advance, £3 on the door

### CHRISTMAS SHOW

Yes! I've just got to get along to the the Commodore Christmas Show. Please rush me -  
 \_\_\_\_\_ Adult @ £5 £4 \_\_\_\_\_ Under-16 @ £3 £2

\*I am sending a cheque for £ \_\_\_\_\_

\*Please charge £ \_\_\_\_\_ to my \*Access/\*Visa

Card number \_\_\_\_\_

Expiring \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

Telephone \_\_\_\_\_

Please send your application form and cheque or credit card details to - Commodore Christmas Show, Database Direct, FREEPOST, Ellesmere Port, South Wirral, L65 3EB.

\*Please delete as appropriate

# Commodore

Commodore Christmas Show, Database Direct, FREEPOST, Ellesmere Port, South Wirral, L65 3EB. 051-357 1275



## AUTHORISED DEALER FOR \* AMIGA \* STAR \*

### AMIGA (UK MODELS ONLY)

B2000 with 1Mb Chip RAM	949.00
B2000 + 20/40/80 Mb	
Autoboot + S/W	1099/1279/1495
B2000 + XT Bridgeboard + 20Mb	
Autoboot + S/W	1329.00
B2000 + AT Bridgeboard + 40Mb	
Autoboot + S/W	1759.00
Commodore 1084S Stereo Mon	
with above	249.00
Amiga 500 FLIGHT OF FANTASY Pack	359.00
Amiga 500 SCREEN GEMS Pack (NEW)	359.00

### PRINTERS

Citizen 120D+	129.95
Commodore MPS1270 Colour Ink Jet (NEW)	189.00
Star LC-200 Colour (NEW)	209.00
Star LC-10	159.00
Star LC24-10	239.00
Star LC24-200 (NEW)	259.00
Star LC24-200 Colour (NEW)	259.00
Star XB24-10 24 pin	481.85
Okimate 20 consumables normally in stock	PHONE

### MONITORS

Commodore 1084S Stereo	259.00
Philips 8833 Stereo Colour Monitor	249.00
Philips 8833 Monitor Stand	p&p £2 15.95
Quadram Multi-scan	349.00
Mitac Hi-Res Super VGA Multi-Scan	401.35

### DISK DRIVES

A2000 Autoboot 48Mb Drive	399.00
A2000 Autoboot 80Mb Drive	549.00
Amiga A590 Autoboot 20Mb Drive	
+ S/W	359.00
A2000 Internal 3.5"	p&p £2 69.95
High Quality Amiga Ext 3.5"	
Metal Cased	p&p £2 69.95

### MISCELLANEOUS

A2000 RAM 8Mb Populated	
2/4/6/8Mb	279/399/539/669
A2000 Hi-res Video Card for Multiscans	299.00
A2286 AT Bridgeboard + Drive	679.00
A500 RAM/Clock 512Kb with Disable Sw	45.00
A500 RAM/Clock 1.8Mb Internal Connection	159.00
RAM Chips for A590/2091	
512Kb/1Mb/2Mb	39/75/145
A500 Compatible Power Supply	49.00
Kickstart V1.3 ROM for A500/200	28.00
1Mb Fat Agnus 8372A	69.00
CIA Chip 8520	15.00
Rendale 8802 Genlock	199.00
Vidi-Amiga PAL Frame Grabber inc filters	129.00
RGB Composite Video Splitter	69.95
Surge Protector 4-Way	
Block/ 3-Way Adaptor	15.95/19.95
Midi Interface	34.95

### SOFTWARE

TV*TEXT Professional Titler	129.00
TV*SHOW 2 Presentation	54.95
TV*TEXT + TV*SHOW 2	169.00
Pro Video Plus Titler	189.00
Digiview Gold V4 Digitiser	119.95
Home Office Kit: Kindwords 2, PageSetter 1.2, Maxiplan 1.9, InfoFile, CalcFonts & Artists Choice	129.95
excellence! WP	139.00
Professional Page DTP	179.95
X-CAD Designer CAD	79.95
Music-X	175.00
Midi Interface for above	34.95

ALL PRICES INCLUDE 15% VAT  
CARRIAGE £5 (EXPRESS £10) SOFTWARE £2

Price subject to change without notice. E. & O. E.

## Delta Pi Software Ltd



8 Ruswarp Lane, WHITBY, N. Yorks YO21 1ND  
TEL/FAX: 0947 600065 (9am-7pm)



### NEW! - "NEW DIMENSIONS" - NEW!

Amazing 3D effects make your Amiga come alive. You will find that graphics and pictures float before your eyes in front of your screen! The depth of the pictures extends up to ten feet into the screen! These fantastic effects have to be seen to be believed. Included on the disc are generous numbers of 3D pictures, 3D graphics and 3D games. We even provide a tutorial to help you design your own 3D effects on a paint package or write your own 3D programs. Included in the package are two pairs of 3D specs so you can experience these amazing effects with a friend. Probably the most impressive pictures/graphics you have ever seen on a computer! New Dimensions package - **Excellent value at £13.95.**

### NEW! - DESIGN-A-TEESHIRT - NEW!

Have you ever wanted to put YOUR art work on a T-shirt? Just send us a disc with your picture/logo/slogan on and we will send you back a high quality white cotton/polyester T-shirt with your art work printed on it. (We will of course return your disc!) Ideal presents with your own individual design. Artwork from paint packages or digitisers is ideal. Please state your size - small, medium, large, extra large. **Outstanding value at £14.95.**

### THE NEW - "BEGINNER'S GUIDE TO AMIGADOS"

This is a highly effective way to take you from a beginner to an expert on AmigaDOS. This very popular package has now been COMPLETELY updated to cover all AmigaDOS versions. The package consists of a guidebook, a tutorial DISC, a crib card and FREE software worth over £80. This is a clear and well thought out guide to AmigaDOS. It takes you by simple steps, with many examples through the powerful AmigaDOS commands. The emphasis is on learning through experience and doing - not just reading like most other books. In no time at all you will master a fast, powerful and customised operating system... you can easily include your own pictures, messages and programs.

The guide includes an incredibly fast picture loader, a password system, a gallery of high quality pictures, a variety of boot up sequences, other high quality programs and much, much more... Guide book, Disc, Cribcard etc. **only £13.95.**

### WIZARD'S GUIDE TO BASIC

This is a very effective and enjoyable way to learn BASIC. The whole concept is designed to help you learn quickly and achieve impressive results in no time. Your confidence and skills will rise rapidly as you make your way through this course. The Wizard's BASIC guide comes on two discs with a sophisticated electronic book - You can get help in the form of text, moving demonstrations, graphics, sound or speech with just a touch of a button. The course starts at beginner level and carefully rises to expert level. You will learn to master graphics, colour, sound, movement, speech, windows, menus, dataprocessing etc. Hundreds of example programs and demos are included. This is a value packed package which will leave you with a wealth of knowledge and expertise. **Excellent value £13.95.**

### MASTERPIECE

"THE BEST PICTURES I HAVE EVER SEEN ON THE AMIGA" reported a recent review. This package takes you on a spectacular trip through the world of art. Every picture is of true quality and is displayed using thousands of colours. To help you enjoy the world's heritage of art to the full we have included comprehensive notes on each artist and painting. Whether you are an art expert or know nothing at all about art, this is a wonderful way to appreciate the great paintings of the world (and appreciate the graphic capabilities of your Amiga as well). The package comes with two discs packed full of pictures and information. **Outstanding value £8.95.**

### EXTRA VALUE!

\*Buy two or more of the above products and benefit from the following discounts... 2 products - £2 discount, 3 products - £3 discount, 4 products - £4 discount etc. Discounts are given on the TOTAL value of the order.

UK P&P - FREE and by FIRST CLASS post. Overseas orders welcome - Europeans please add 50p Outside Europe please add £1.50 for airmail. All payments in pounds sterling please.

### Cheques/P.O.'s to:

Wizard Software (Dept. ACB)  
20 Hadrian Drive, Redhills, Exeter, Devon. EX4 1SR

# APL 68000



APL.68000 costs **£99.95**  
(inc VAT)

and is supplied with a comprehensive manual, reference card and keyboard stickers. P&P £3 (inc. VAT). To order, contact: Micro APL Ltd South Bank Technopark 90 London Road London SE1 6LN Tel: 071 922 8866

### APL for the Commodore Amiga

The APL programming language is used by many of the world's largest corporations because it is easy to learn and extremely powerful in operation. APL's concise notation and array handling features make it ideal for applications involving large amounts of data or frequent code alterations. APL.68000 is the only version of this unique programming language which is available for the Amiga.

#### APL.68000

- Unique array handling language
- Symbolic notation
- Fast program development
- 15 digit accuracy
- Easy to learn

#### Amiga Specific Features

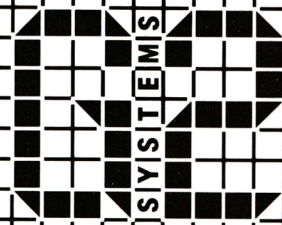
- Standard Amiga user interface
- APL multi-tasking. Full access to Amiga sound and graphics
- APL terminal emulator

Standard implementation 68881 support version

Versions of APL.68000 are available for most 68000-based computers

**APL - the Alternative Programming Language**

# Amiga Genlock Mixer



## VIDEOCENTER VC1

Video Mixing & Keying - Fade to Black  
True S-VHS Key  
RGB Buffered Output  
Software Controllable  
Transparent Colours Adjustable  
Price **£645.00 exc. VAT**

## VIDEOCENTER VC2

As VC1 but with 20 Wipe Patterns  
Circular  
Diagonal  
Wipe/Insert  
Wipe Position via Joystick  
Price **£995.00 exc. VAT**  
Upgrade VC1 to VC2 **£425.00 exc. VAT**

All available from:

G2 Systems, 5 Mead Lane, Farnham, Surrey GU9 7DY

Tel: (0252) 737151





# POWER CO

Power's exclusive range of offers on floppy drives!

## The Famous PC880 Power Drive!

**£65**

- Special NEW circuitry to prevent that annoying click when the drive is empty
- Isolating on-off switch
- Thru' port for daisy chaining
- 880K formatted!
- Comes with free utility disk
- 12 Month warranty



## NEW IN!

The dual 3.5" drive with power supply

**ONLY £110**



We also stock fully guaranteed Verbatim disks and a range of boxes, including:

40 Disks with lockable storage box - **ONLY £29.95**

15 Disks with storage box, for an unbeatable **£9.95!**

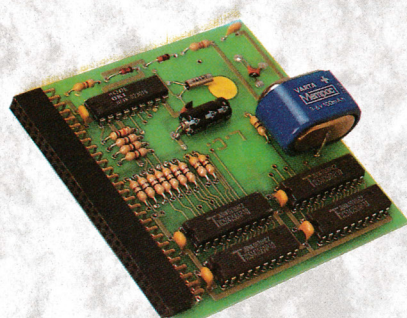
The A500 Internal drive kit

**£49**

External 5.25" drive

**£99**

## MEMORY EXPANSIONS



## The 1.5MB Expansion Board

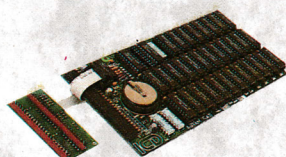
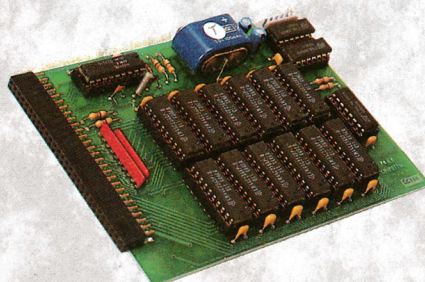
Plugs easily into your Amiga (Kickstart 1.3 & above) to give you the memory you need. Simple internal fitting

**ONLY £149**

## The A500 Clock Card

A half megabyte RAM expansion with battery backed up clock and a free disk packed with useful software **£45**

OR! With a new release game! **ONLY £59**



Expand up to 4MB with our latest board **£299**  
Expand up to 6MB with our latest board **£489**

RAM chips for the upgrade specialist!  
256 x 4 RAMS **£6.99** 1 x 1 Mbit RAMS **£9.95**  
Kickstart 1.3 ROM **£39** GARY ROM **£49**

## PRINTERS

We are proud to present an offer you'll be proud to accept!

## Glorious Colour Kit!

- |                      |                                       |
|----------------------|---------------------------------------|
| ■ LC10 Colour model  | LC10 Colour <b>£229</b>               |
| ■ Parallel Cable     | LC24 10 <b>£259</b>                   |
| ■ 200 sheets paper   | XB 10-24 Colour <b>£499</b>           |
| ■ 200 address labels | HP Paintjet Colour <b>£799</b>        |
| ■ Delivery and VAT   | HP Paintjet Colour XL A3 <b>£2500</b> |



**PLUS**  
LC10 Colour Fabric  
Printing Kit  
**ONLY £24.95**

Also in stock, an impressive range of automatic sheet feeders, replacement ribbons and printer stands.

**ALL PRICES INCLUDE VAT AND ARE SUBJECT TO CHANGE**



# COMPUTING

POWER - the potential for your Amiga!



Basic Pack  
Super Pack  
Ultra Pack  
Mega Pack  
Hyper Pack  
With PC880, 1.5MB and A590 Hard Drive!

As above  
With PC880 Drive  
With PC880 and 512K  
With PC880 and 1.5MB  
LIMITED TIME ONLY

£399  
£459  
£499  
£599  
£949

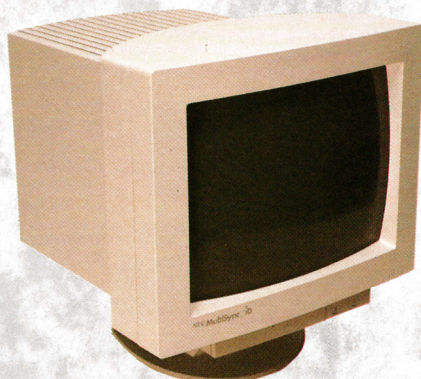
**COMMODORE A590 20MB Hard Disk £379**  
**ADDITIONAL 2MB RAM £149**

The GVP IMPACT A500 Hard Drive  
With SIMMS for a huge 4MB extra RAM!

## MONITORS

The Phillips 8833

£269



	0K	2MB	4MB
■ 20MB	£359	£459	£559
■ 45MB	£599	£749	£899
■ 80MB	£849	£999	£1149
■ 100MB	£999	£1149	£1299

The NEC Multisync ONLY **£649!**  
The ultimate high performance device  
supporting mono and colour formats

## ACCESSORIES The finishing touch

Keep it covered! With this new hard wearing dust cover specially designed  
to fit snugly over the Amiga

Replacement 2 button mouse **£20**  
Naksha Mouse **£35**  
Optical mouse with pad **£35**  
'Anti-click' board for your internal or  
external drive - introductory offer **£19.95**



£9

# POWER HOUSE DIRECT

Power House is the fast expanding direct sales arm of Power Computing Ltd. With competitive prices, backed by large stocks and a trained sales and technical department. Our high speed computerised service makes Power the first stop for the Amiga enthusiast. Call us now on **0234 273000** for advice on the very latest in software and peripherals.



Rush in your credit card order FREE on **0800 581742**. Make the most of our "fast fax" service on **0234 270133**, or simply fill in and post this form to:

Power Computing Ltd,  
Power House,  
44a Stanley Street,  
Bedford, MK41 7RW.

Name

Address

Postcode

Telephone

System owned

Credit Card No.



Expiry Date

--	--

Signature

I would like to order

Make Cheques Payable to  
Power Computing Ltd

I enclose a cheque/PO for

£



Power technical helpline Monday - Friday 3pm - 5pm 0234 273248





# POWER COMPUTING

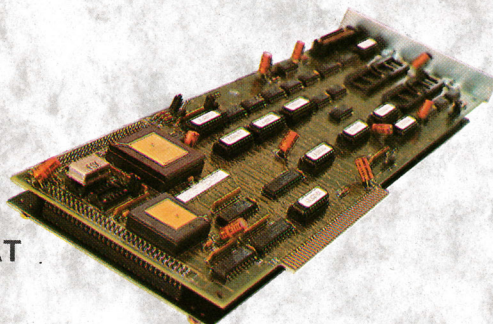
## THE AMIGA 2000 SPECIALISTS SOLE UK DISTRIBUTOR FOR GVP

### 68030 POWER

FOR YOUR AMIGA 2000

**50MHz** Now available!!

- 16MHz, 28MHz, 33MHz
- Accelerate your Amiga up to 10 times normal speed!
- Up to 8MB High speed 32 bit "nibble" RAM.
- On-board AT interface for lightning fast hard disk access
- Optional 68882 Coprocessor

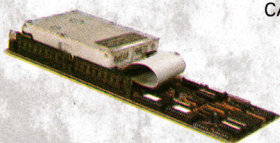


68030 ACCELERATOR BOARD	
16MHz	<b>£599</b>
28MHz	<b>£799</b>
68030 WITH 4MB 32BIT RAM	
16MHz	<b>£1595</b>
28MHz	<b>£1795</b>
33MHz	<b>£2579</b>
50MHz	<b>£2975</b>
AT HARD DRIVE for 68030 CARD	
40MB	<b>£399</b>
80MB	<b>£799</b>
Phone for other combinations	

### QUALITY HARD CARDS AT UNBEATABLE PRICES!

- Plug in & Go! Installation
- 20 - 100 MB
- Sockets for 2MB Simm RAM
- Autoboot feature

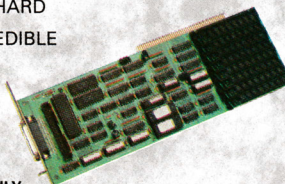
20MB	<b>£399</b>
46MB	<b>£499</b>
60MB	<b>£599</b>
80MB	<b>£699</b>
100MB Quantum	<b>£899</b>
2MB RAM Upgrade	<b>£149</b>



POWER HOUSE  
**SPECIAL OFFER!**  
40MB QUANTUM HARD  
CARD AT THE INCREDIBLE

PRICE OF  
**£479**

INC. VAT  
LIMITED OFFER ONLY



### 8MB EXPANSION BOARDS

with Hard Disk Controller

Expand up to 8MB with on-board SIMMS

All necessary connections for SCSI Hard Disk Drive

2MB	<b>£439</b>
4MB	<b>£579</b>
8MB	<b>£869</b>

### HARD DRIVES

46MB Seagate	<b>£329</b>
60MB Seagate	<b>£489</b>
84MB Seagate	<b>£568</b>
100MB Quantum	<b>£799</b>

## BUY YOUR AMIGA 2000 SYSTEM FROM POWER

Leaders in the Home and Business Market

- Amiga B2000 Rev 6.2
- 1MB RAM
- 20MB Hard Disk

only **£1195**  
INC. VAT



### VIDTECH SCANLOCK

STATE OF THE ART AMIGA GENLOCK

- Broadcast quality video output
- PAL, NTSC, SVHS Compatible
- Handles all Amiga Graphics modes
- Completely Eliminates video dot crawl

**£899**



### NEW FOR THE AUTUMN!

#### ICD HARD CARDS!

Bare	<b>£159</b>
46MB	<b>£419</b>
100MB	<b>£799</b>

#### ICD ADDRAM -2000

2MB	<b>£239</b>
4MB	<b>£355</b>
8MB	<b>£575</b>

Amiga B2000	<b>£899</b>
Extra internal floppy	<b>£49</b>
8MB RAM Board with 2MB RAM	<b>£299</b>
<b>2MB UPGRADE FOR THIS SYSTEM</b>	<b>£159.95!</b>



### EASYL 2000

**£299**

- Pressure Sensitive Drawing Tablet
- Draw directly on your computer screen
- Using ordinary pen or pencil
- 1024x1024 pixel drawing area
- Works with all popular software packages

Power Computing Ltd • 44a Stanley Street • Bedford • MK41 7RW

**Telephone 0234 273000 • Fax 0234 270133**

Orders and dealers enquiries welcome by Telephone or Fax

ALL PRICES INCLUDE VAT AND 24 HOUR DELIVERY • PRICES SUBJECT TO CHANGE WITHOUT NOTICE





# POWER COMPUTING

**AVAILABLE NOW FROM POWER!**

**POWER'S FULL HOUSE  
OF TOP QUALITY SOFTWARE.**

## THE AMAZING AMIGA 3000



We are proud to present Commodore's new workstation which has now arrived and comes with a full range of exciting features.

All Amiga 3000 machines come with 2MB of RAM, a built in hard disk and the high speed Workbench v2.0. Ideal for the serious user or professional.

### Features include:

- 16 & 25MHz Processor Speeds
- 40 or 100MB Hard Disk as standard
- Workbench v2.0 included!
- 2MB RAM expandible on-board to 6MB!
- 68030 Processor with coprocessor
- Superhires Graphics with 1MB RAM!
- Built in SCSI Interface

Amiga 3000 16MHz 40MB	<b>£2495</b>
Amiga 3000 25MHz 40MB	<b>£2995</b>
Amiga 3000 25MHz 100MB	<b>£3195</b>

The prices include VAT and 24 hour delivery\*

Call us now for more information or drop into our showroom for a demonstration.

\* If stocks allow

Our extensive range of Amiga software currently includes:

### Art and Graphics

Animagic .....	<b>£69</b>
Comic Setter .....	<b>£37.95</b>
Deluxe Photolab .....	<b>£48</b>
Digipaint 3 .....	<b>£49</b>
Elan Performer .....	<b>£39</b>
Fanatvision .....	<b>£29.95</b>
Interfont .....	<b>£79</b>
Kara Screen Fonts .....	<b>£49</b>
Pro Video Plus PAL .....	<b>£169</b>
Pro Draw 2.0 .....	<b>£100</b>
Sculpt 4D Junior .....	<b>£149</b>
Turbo Silver .....	<b>£99</b>
XCAD Professional .....	<b>£325</b>
Deluxe Paint 3 .....	<b>£59</b>
Deluxe Video 3 .....	<b>£79</b>
Digiview Gold 4 ....	<b>£99.95</b>
Express Paint 3 .....	<b>£69</b>
Interchange .....	<b>£49</b>
Intro Cad .....	<b>£39</b>
Movie Setter .....	<b>£48</b>
Plxmate .....	<b>£35</b>
Sculpt 3D XL .....	<b>£99</b>
Sculpt 4D .....	<b>£399</b>
Video Magic & P.A.S.E. ....	<b>£49</b>
XCAD Designer ....	<b>£87.95</b>

### Word Processing, DTP & Business

Excellence .....	<b>£159.95</b>
Kind Words .....	<b>£39</b>
Pen Pal .....	<b>£99</b>
Superbase Pro .....	<b>£160</b>
The Works Platinum .....	<b>£149</b>
Home Accounts ....	<b>£24.95</b>
Pagestream .....	<b>£120</b>
Pro Page 1.3 .....	<b>£179</b>
Pro Text .....	<b>£74.99</b>
Superbase 2 .....	<b>£62</b>
Superplan .....	<b>£62</b>
Word Perfect .....	<b>£164</b>
Pro Write 3.0 .....	<b>£99.95</b>

### Languages Etc

Devpac Amiga .....	<b>£45</b>
Lattice C v5 .....	<b>£160</b>
Manx C Dev .....	<b>£163</b>
Power Windows 2,5 ..	<b>£48</b>
Hisoft Basic .....	<b>£55</b>
Lattice C++ .....	<b>£299</b>
Manx Debugger .....	<b>£49</b>

### Utilities

Arexx .....	<b>£39</b>
BBC Emulator .....	<b>£39</b>
DOS 2 DOS .....	<b>£29</b>
Fine Print .....	<b>£39</b>
Transformer .....	<b>£29</b>
BAD .....	<b>£35</b>
Cross DOS .....	<b>£29</b>
Quarterback .....	<b>£34</b>
WB 1.3 .....	<b>£15</b>

### Music

Midi Interface .....	<b>£25</b>
Dr T's Drums .....	<b>£25</b>
KCS Level 2 .....	<b>£229</b>
Pro Sound Gold .....	<b>£45</b>
Sonix .....	<b>£45</b>
MM5000 Keyboard ...	<b>£55</b>
Dr T's Midi Studio ....	<b>£49</b>
Music X .....	<b>£199</b>
Amiga Music System .....	<b>£99</b>



**WE ARE THE SPECIALISTS WHEN IT COMES TO  
PROGRESSIVE SOFTWARE. CAN'T SEE THE TITLE  
YOU'RE LOOKING FOR? CALL 0234 273000 AND OUR  
SALES TEAM WILL BE PLEASED TO HELP YOU.**

Power Computing Ltd • 44a Stanley Street • Bedford • MK41 7RW

**Telephone 0234 273000 • Fax 0234 270133**

Orders and dealers enquiries welcome by Telephone or Fax

ALL PRICES INCLUDE VAT • PRICES SUBJECT TO CHANGE WITHOUT NOTICE



# CUMANA HAS THE DISK DRIVE TO SUIT YOUR AMIGA, AS WELL AS YOUR POCKET



## The Cumana Pedigree Includes

### CAX 354

3 1/2", SLIM 25mm DRIVE UNIT  
 FORMATTED CAPACITY 880K  
 AMIGADOS COMPATIBLE  
 DAISY CHAIN CONNECTOR  
 DATA ENABLE/DISABLE SWITCH  
 LOW POWER CONSUMPTION  
 QUIET, HIGH SPEED ACCESS  
 ACTIVE INDICATOR  
 DATA LEAD

### CAX1000S

5 1/4", SLIM 42mm DRIVE UNIT  
 FORMATTED CAPACITY 360/880K  
 AMIGADOS & MS-DOS COMPATIBLE  
 DAISY CHAIN CONNECTOR  
 DATA ENABLE/DISABLE SWITCH  
 LOW POWER CONSUMPTION  
 QUIET, HIGH SPEED ACCESS  
 ACTIVE INDICATOR  
 DATA LEAD  
 40/80 TRACK SWITCH

Designed and manufactured in the UK to the highest standards, all Cumana disk drives include 12 months warranty and are available from area distributors and a national dealer network.

**Look out for the distinctive packaging in your high street, today!**



CUMANA LIMITED, THE PINES TRADING ESTATE, BROAD STREET, GUILDFORD, SURREY GU3 3BH TEL: GUILDFORD (0483) 503121

All trademarks are recognised and acknowledged



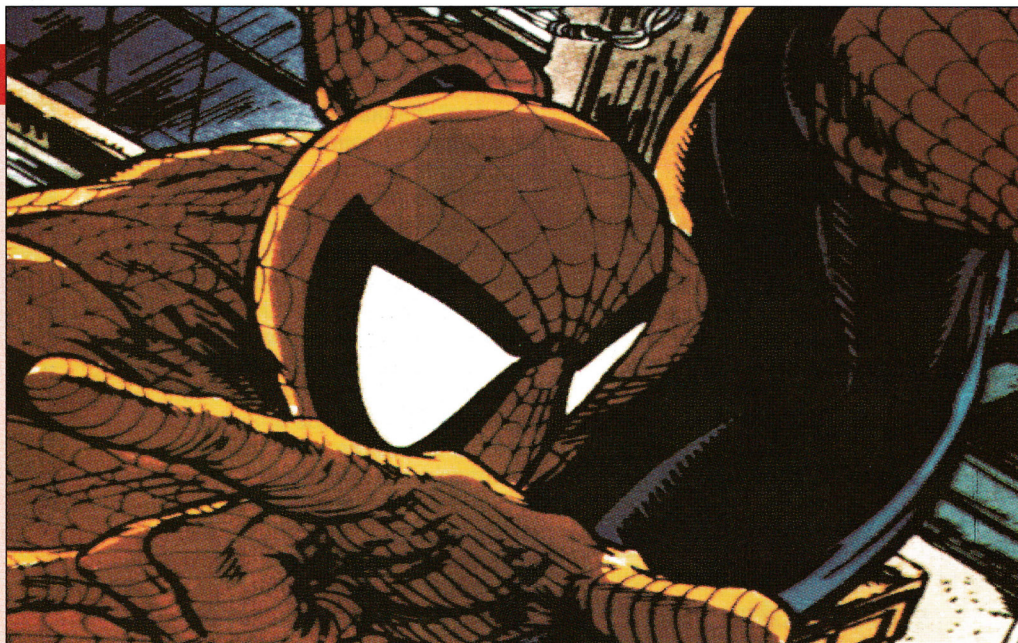
# All the latest news on the games software scene

## Empire

SPIDER senses are tingling... that evil Mysterio has kidnapped sweet Mary Jane... got to get her back!

If you want to help good 'ol Spidey, you'll need two things: The first is a strong desire to take a tour of some old movie sets, and the second is a copy of the game. The latter is available this very month, so look out for it.

Also due to be released in the next few months are *Wrath of the Demon* (which apparently has 60 frames per second animation – something we'd really like to see on a 50 frames per second machine) and a game based on the life and times of Paul Gascoigne. Can't wait.



## Domark

YOU meet the nicest people at Press launches. A case in point is the wonderfully wonderful Clare Edgely, from Domark.

Domark had several things they wanted to tell us about, including the host of Atari coin-ops they were converting.

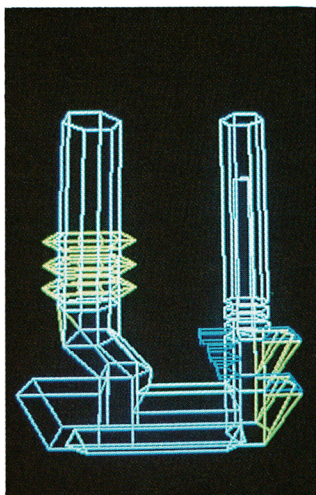
One is the fast and fabby *Stunrunner* which should be available shortly, and judging from demos we saw will be well worth waiting for.

Atari are helping as much as they can with coding by supplying actual game graphics. The picture shows the outline of a graphic which will be filled in by the time the game is finished. Other games being converted include *Hydra*, *Thunder Jaws* and *Skull and Crossbones*.

The first Russian fighter simulator should be with us soon, too. The version we saw on the PC looked both playable and exciting, and the Amiga game is not far behind.

Other neat stuff "coming soon" includes what could be the war game of the decade, *Vietnam*. Written by a programming historian, this will be a complete "laboratory" where you can try out ideas and strategies. It's accurate, easy to play and due out in January.

The *Freescape* system used in the games *Dark Side* and *Castle Master* will soon be released to the general public. It's true: If you think



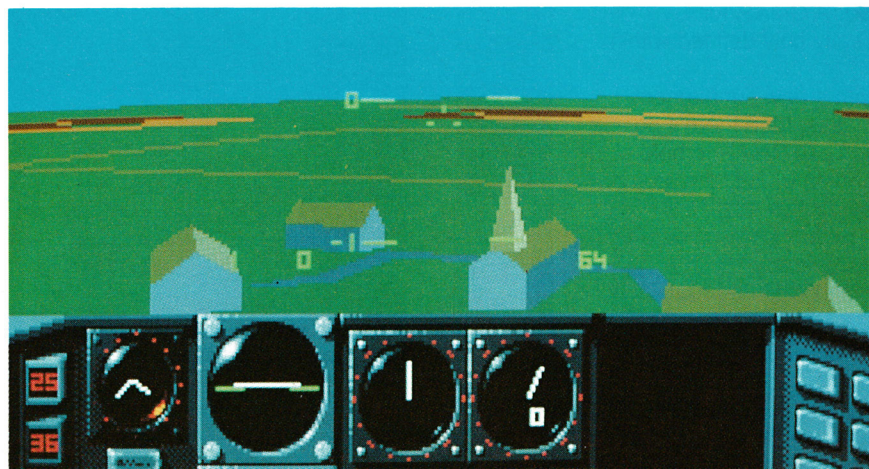
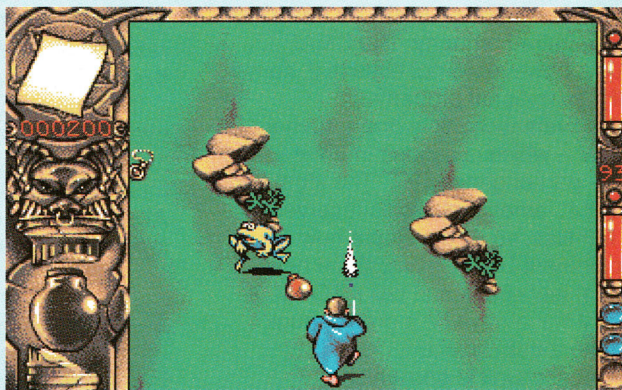
you could do better than the previous *Freescape* games, you'll soon be able to have a try.

Using the three dimension modelling system, plus a complete puzzle programming language, you'll be able to knock up anything from an interactive map to an atmospheric adventure with ease.

## Infogrames

THERE certainly seems to be a veritable plethora of games on the way from this software house. As well as *Alpha Waves* which we took the eau out of last month, games based on *Gengis Khan* and *Bandit Kings of Ancient China* will be with us later this month.

The game that caught my eye was the old novice magician plot game *Mystical*, mainly because the Wizard's name looks like a typing error. The demo certainly looked very pretty, so keep an eye out for it: It should be here before Christmas.



*Glasnost* takes to the air, and we don't mean Radio Moscow



**T**HE Amiga's Interchange File Format is a wonderful thing. By adopting a workable, intelligent standard the user is assured a relatively easy time when it comes to swapping data between programs and even other computer systems.

So far we have looked at the overall structure of the IFF tree, and described a few of its many possible uses. We now increase the magnification of our microscope a little more and focus on the contents of the IFF chunks themselves. What lies within?



A PROPERTY is a chunk which describes other chunks. It is rather like a set of assignments in a program, such as:

```
width=320;
height=200;
x.cord=10;
y.cord=10;
```

A data, or non-property, chunk holds the actual data of a FORM. You could think of property chunks as adjectives, and data chunks as nouns, so BMHD and CMAP are properties, and BODY is a data chunk.

Some chunks are essential in a particular type of file. An ILBM file, for example, must have a BMHD chunk in order to be valid, so BMHD is described as a required property. The CMAP chunk, however, is not essential, so we call it an optional property.

A universal chunk is one – such as FORM – which is defined in IFF-85, and forms part of generic IFF. The identifier "FORM", among others, is reserved for all IFF files, so if I develop a new supplement I can't invent some new type of leaf chunk and call it FORM. A FORM will always be a group chunk holding a data object.

A local chunk is one which is reserved only within the supplement in which it is defined. A CMAP, for example, is currently only defined within ILBM.

If I come up with a new supplement, say ATLS for an atlas, then there's no reason why I can't use CMAP to hold a nautical navigation chart, so long as I only use it as such within a FORM ATLS.

When an IFF supplement is first produced it is asking a bit much to expect the designer to think of every possible use to which the new FORM

type will be put.

The IFF standard permits developers to invent new types of chunk to go into previously defined forms. One example is CRNG – a chunk introduced by Electronic Arts when they developed Deluxe Paint. It is inserted into a FORM ILBM to describe colour cycling.

Because it was introduced after ILBM first came into use, it is known as a non-standard chunk. As IFF allows non-standard chunks to be introduced, any program which reads IFF files *must* be prepared to skip over any chunks it does not recognise.

A "CAT" is a group chunk which is used as a mixed bag. It could hold, for example, a slide show, with a FORM SMUS for music, and a LIST of FORM ILBMs to be shown in sequence.

A LIST is like a CAT, except that it allows for properties to be shared between chunks inside it. So if a lot of pictures all use the same palette, you can have a LIST containing a PROP with a CMAP inside it, followed by a whole sequence of FORM ILBMs without CMAPs.

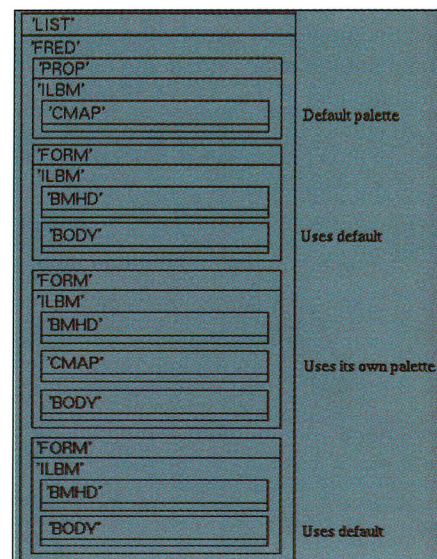
A PROP is not the same as a property chunk – rather it is a group chunk which is used for holding one or more property chunks. A PROP will only ever appear inside a LIST – not a FORM or CAT.

If one or two pictures have a different palette from the majority, you can put a PROP at the top to set a default for FORM ILBMs without CMAP chunks, then different CMAP chunks inside the ones which differ, to override the default.



TO give you a flavour of how IFF files really work, there are two programs on this month's cover disk.

IFFanalyse lets you convert IFF files into a human-readable form. You can just examine them, or if you wish edit them with your favourite text editor. Afterwards you can use the second program, IFFsynthesise, to compile



**A PROP inside a LIST sets default properties**

them back into the IFF format that almost all Amiga applications use.

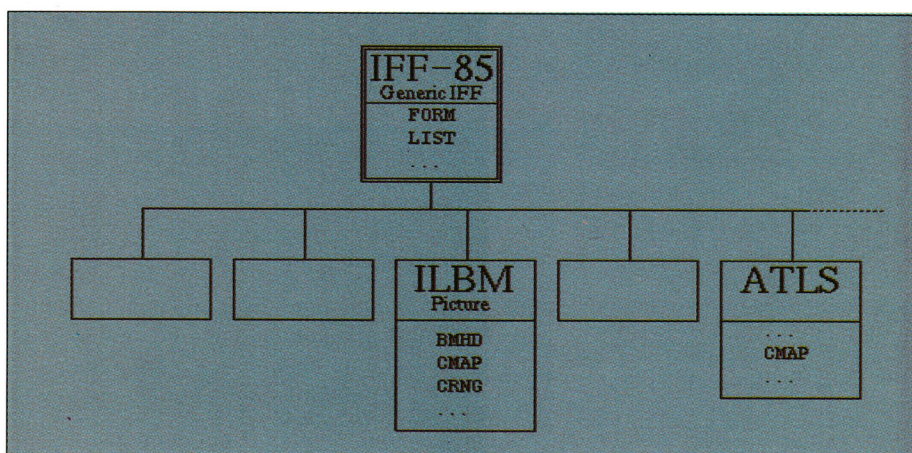
In its simplest form, IFFedit would simply convert binary IFF files into hex listings with chunk names and sizes in text. All that recompilation would then involve would be a hex lookup, plus a bit of backtracking to ensure that chunk sizes were correctly set. This is just what IFFedit does if an IFF file is not of a type that it recognises. In this case I will refer to it as generic translation.

IFFedit does more than this though. If a file is of a type that is recognised, such as 8SVX or SMUS, then any standard data or property chunks will be translated in a way that reflects their meaning.

Non-standard chunks will still, of course, be translated using the generic method, provided that they conform to IFF-85 syntax.



EACH IFF file contains one FORM, LIST, or CAT, inside which may be nested other chunks according to the concrete syntax below (based on "Syntax Definitions", Exec Manual



**FORM is universally defined, CMAP is not**



App.B p.40 – this version sacrifices rigour for readability):

```
Chunk      ::= ID #{ UBYTE* } [0]
FORM       ::= "FORM" #{ Type (Chunk | FORM | LIST | CAT)* }
CAT        ::= "CAT" * #{ Type (FORM | LIST | CAT)* }
LIST       ::= "LIST" #{ Type PROP* (FORM | LIST | CAT)* }
PROP       ::= "PROP" #{ Type Chunk* }
```

Note:

[0] represents a pad byte which may be needed.

# is a LONG type number stating the number of following {braced} bytes.

\* means 0 or more instances (it's not a C-language pointer).

An equivalent syntax for the text version would read:

```
Chunk      ::= ID '{ ' CHAR* ' }'
FORM       ::= "FORM" '{ ' Type (Chunk | FORM | LIST | CAT)* ' }
```

and so on...

Note that the pad bytes and byte counts have gone – alignment is unnecessary, and the delimiting braces now appear in the actual file, not just the syntax statement. Two cosmetic features have also been added – spaces and comments. They don't appear in the syntax diagram because they are skipped over at lexical analysis, before syntax analysis starts. Comments start with a semicolon, and extend to the end of the line on which they appear.

This example shows a sample use of IFFanalyse on a generic – in other words unrecognised – form. This is how the example form would appear if listed using "list NBRS.iff opt h"

```
0000: 464F524D 00000026 4E425253 4B594C49 FORM...&NBRSKYLI
0010: 0000000B 01234567 89ABCDEF 497CD100 .....#Eg....I|..
0020: 4A41534E 00000005 03122937 5900 JASN.....)7Y.
```

IFFanalyse would show that this file is a FORM of type NBRS containing two chunks of type KYLI and JASN respectively. Chunk sizes are given (in decimal) as comments, and an Ascii representation of chunk contents is also given.

```
FORM { NBRS ;size=38
  KYLI { ;size=11
    01234567 89ABCDEF 497CD1 ;.#Eg....I|.
  }
  JASN { ;size=5
    03122937 59 ;..)7Y
  }
}
```

If you were to edit this text file you would only need to concern yourself with material before the semicolon in each line. IFFsynthesise will calculate chunk sizes from the amount of actual data between "{" and "}" braces, so the fact that a size comment such as " ;size=38 " or Ascii comment such as " ;..)7Y " may no longer be correct after editing a file is unimportant.

An output like the one above is better

than nothing, but it suffers from one drawback – it reflects only the structure of the data, not its meaning. If you're working with 8SVX sampled sound files, or SMUS music files, you're in luck.

IFFedit recognises these forms, and for each one it has a list of standard chunk types which receive special treatment. There is a separate list for each form type because chunk types are only reserved within a form type.

A FORM AUTH chunk happens to be the same as an 8SVX AUTH, but there's no rule saying it has to be. In particular, I might treat an ILBM BODY – if I get round to supporting ILBM – quite differently from 8SVX BODY. Any addition made to IFFanalyse must be made to IFFsynthesise as well, otherwise IFFsynthesise will fail to recognise some mnemonic which has been used to represent data.

An 8SVX chunk has eight standard chunk types - VHDR, NAME, Copyright ("(c)"), AUTH, ANNO, ATAK, RLSE and BODY. Descriptions of these can be found in the Exec manual App.B pp.63-68, and are not given here.

NAME, Copyright, AUTH and ANNO are treated as text, so a name chunk:

```
4E414D45 00000006 73636F72 6532
NAME....score2
```

would appear as:

```
NAME { ;size=6 "score2" }
```

ATAK, RLSE and BODY are translated generically. A future version could give mnemonics for ATAK and

RLSE chunks.

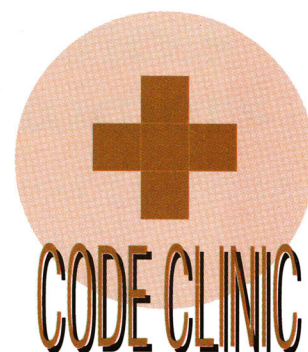
VHDR has a special format:

```
56484452 00000014 00000400 00000000 VHDR.....
00000000 6E190100 00010000 .....n.....
```

appears as:

```
VHDR { ;size=20
  oneShot 1024
  repeat 0
  PerHi 0
  PerSec 28185
  octaves 1
  comp 0
  volume 65536
}
```

Mnemonic names, for example, "PerSec" are not case-sensitive, but they must appear in the order given above, and the decimal numbers after them are size checked by IFFsynthesise.



**Paul Holmes continues his look at the Amiga's unique filing system, the IFF. This month – properties, chunks and a chance for you to experiment with file formats yourself**

*Next month Paul looks at more examples where IFF can save you time and frustration. More chunks than a jar of orange marmalade!*



# Greater London Computers

*The AMIGA Specialists.*

## AMIGA 3000's

The complete Amiga 3000 range, available now and we are specially extending our introductory offer of a free 15" Multisync Monitor with each A3000 bought. This extension of the offer will last only until the end of the Commodore Christmas Show in November. So you had better hurry as we have only limited supplies of the machines on this offer.

A3000 16Mhz/40Mb

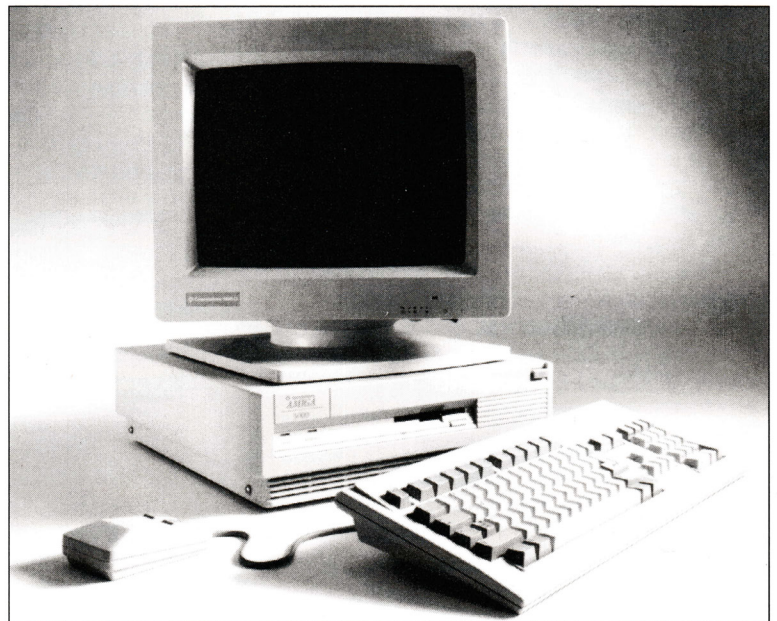
+ FOC Monitor 2499.00 + VAT

A3000 25 Mhz/40Mb

+ FOC Monitor 2999.00 + VAT

A3000 25 Mhz/100 Mb

+ FOC Monitor 3299.00 + VAT



(Note the A3000 is approved by Cosmo)

### NEW EDUCATIONAL PACK

A new Educational Pack, aimed at the Primary School level is now available, The Class of the 90's "First Steps" pack is now available at a price of £599.95.

The pack includes the A500, TV Modulator, A501 Memory Expansion and a selection of Software for Educational use. The pack also includes a Resource file, a guide to the National Curriculum and the packs uses; there is also an introductory video.

The "First Steps" pack is endorsed by the National Association for Primary Education.

Educational Buyers, Schools etc Call 081-527-0405 and ask for Educational Sales for details of Discounts etc.

**Greater London Computers, 481 Hale End Road**  
**TEL 081-527-0405**



# AMIGA 500

NEW

SCREEN GEMS

Pack.

**ONLY £379.95**

including:

Days of Thunder, Back to the Future II, Night Breed, Shadow of the Beast II & Deluxe Paint II.

## Business Customers

Our Business Division can help you with all your computer needs. From Hardware to Software and Supplies

For more information and a credit account application, call 081-527-0405 and ask for Business Sales.

Delivery on all items is free to UK addresses. All purchases of £1000 or more; earns a free Teddy Bear – "Cosmo"

All enquires about Bears should be made to Cosmo in our Teddy Bear Department.



### A Message from Cosmo

*"Yo Dudes dis is Cosmo". Just want to drop you a line an tell you that GLC is the coolest most well 'ard computer shop and company in the whole world. Which Mr Mike says is rather big, So there Dudes."*

GLC the Company with a "Bear".

## X-COPY II

GLC would like to apologise but we have had to raise the price on this popular item.

**£24.95**

**Highams Park, Chingford, London. E4 9PT**

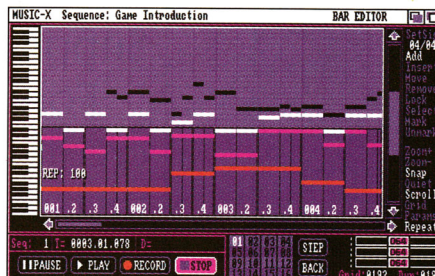
**FAX 081-503-2341**



## MUSICX/Microllusions-The Software Business/£230/0480 496497

MusicX is generally regarded as the number one sequencer currently available for the Amiga. Unlike the rest of the pack, MusicX was developed on the Amiga specifically for the Amiga, as a result it boasts easily the most friendly and well designed user interface of all.

The 250 tracks of real time MIDI



MusicX's editor takes some beating

recording offers such features as punch in/out, multichannel record, track merging and splitting, plus a lot more.

Editing is via a friendly piano roll-like bar editor and a more conventional MIDI stream editor. The current release does not offer any form of score editing, but Microllusions have promised both this and lots more in a future release.

Also worth a mention is MusicX's powerful filters page which acts like a dedicated MIDI patchbay, allowing you to redirect MIDI events and even assign events to individual keys using the keymap editor.

For those of you with synthesisers, MusicX offers a powerful librarian page to store synth patch data. Also included are a range of patch editors for various synths including the Roland D50.

## MASTER TRACKS PRO/Passport/£289/071- 724 4104

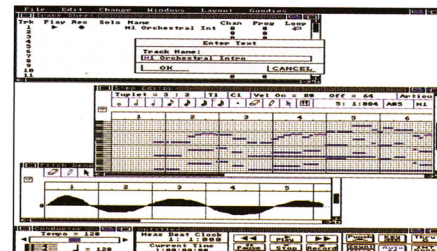
Until recently, Master Tracks Pro was Passport's only release for the Amiga. Although it is not that well known in this country, the Americans love it. Master Tracks is available on a number of different systems, including the Mac, Amiga and ST. All share a common, graphical-orientated user interface based around the Mac Finder system.

Master Tracks offers 64 tracks of realtime recording, complete with some of the most powerful editing options available within an Amiga sequencer.

The main workhorse editor is the step editor, which is almost identical to the MusicX bar editor. The program also has a unique song editor which can be used to built up songs from patterns.

Other editing tools include a useful Fit Time option which can be used to compress or expand a sequence to fit a particular time space – very useful when providing music for video. Also on offer is a *humaniser* that attempts to make sequences more human by making them less rigid.

Master Tracks is a powerful music composition system that gives MusicX a run for its money – a studio proven system that is well worth investigating.



**O**K, so you've finally decided to take the plunge. You've bought yourself a Midi keyboard and a Midi interface for your Amiga, now all that remains is to buy yourself a suitable sequencer package.

But which is the right one for you? After all, they all seem to do basically the same job.

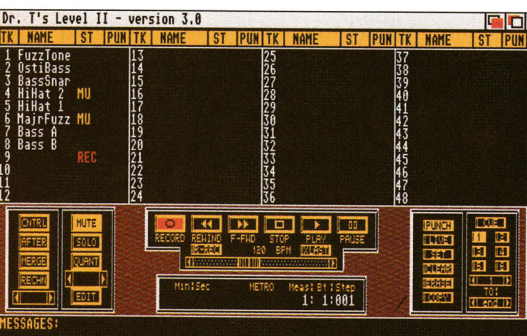
To help you make the right buying decision, *Amiga Computing* takes a look at the current cut of the crop of Amiga sequencers. This month we see what the market has to offer the "professional" musician. And for those of you with less demanding requirements, next month we'll be reviewing the range of budget sequencers.

## KCS 3.0/DR.T £299/071-724 4104

Dr.T's software offer the most complete range of MIDI software available for the Amiga. Their catalogue includes a vast range of patch editors, sequencers to suite all budgets, SMPTE hardware and software, and even a range of Copyist tools for the production of scores from sequencer files.

KCS 3 is available in two versions, Levels 1 and 2. Level 2 has an extra Programmable Variations Generator that applies mathematical techniques to create rhythmic cycles. The heart of KCS 3.0 is a powerful 48 track realtime MIDI recorder providing similar recording options to MusicX. Sequence editing is carried using a MIDI data stream editor only – there's no fancy graphic editors here.

KCS is indeed a powerful sequencer, but it is rather unfriendly to amateur users. If some kind of graphic editing were included, then KCS would have been far more approachable. As it stands, it remains a tool for the hardened professional.



KCS – not the easiest to use

FOR most programmers, composing tunes for their gaming creations meant only one thing – Sound Tracker. During its brief history, Obarski's music editor has become famous among both crackers and demo writers.

Chances are that even the games you buy contain tunes produced using Sound Tracker. However, due to its legal position – nobody seems to know whether Sound Tracker is now PD or not – the program has been almost impossible to obtain.

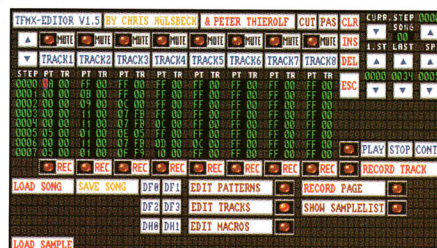
A new (legal) contender for Sound Tracker's throne is TFMX from the German software house of DemonWare. As the manual goes to great lengths to stress, TFMX was designed exclusively for the production of music for Demonware's own game titles. After realising what a good product TFMX was, Demonware have kindly made TFMX available to a much wider audience.

It uses a pattern-based editing

system very similar to conventional drum machines. Songs are constructed by building up patterns that are then combined to form the final song.

Individual patterns are constructed by entering hex values representing the note to be played and the sample macro with which it is to be played. You can specify both the volume of the sample and which channel it is to be played through, a handy facility for creating stereo bounce effects.

Directly after a note has been entered it is followed by a further command that specifies whether another note is to be



TFMX: A legal Soundtracker?



## MUSIC NEWS

No sooner do we learn of MicrolIllusions' plans to develop version 2 of MusicX than sources close to the company have discovered that another upgrade is to be released to bridge the gap between MusicX 1.1 and 2.0.

MusicX 1.3 (nobody seems to know what happened to 1.2) is now in the hands of beta testers, but should be available soon. According to our sources, there are very few additions apart from a number of new libraries for the librarian page and perhaps an extra page or two to provide extended control over the MIDI data flow.

Homegrown MIDI software is something of a rare commodity, but Data-Pak software of Rochford in Essex want to change all that. Data-

Pak's first product is a powerful MIDI diagnostics system written specifically for the Amiga.

What makes this product so remarkable is the price – a mere £9.99.

It's all too easy to get tied up in MIDI leads, but with Data-Pak's MIDI-Toolkit, you can keep track of your system with ease. The program offers comprehensive MIDI diagnostic tools which include realtime analysis of incoming data, a graphical display of the amount flowing through a MIDI network, lead checking and a facility for checking standard format files.

Can you afford not to have the MIDI-Toolkit keeping check on your system? For more information, give Data-Pak a bell on 0702 542229 and they'll be more than happy to sell you a copy.

SYSTEM MESSAGES	CHANNEL MESSAGES	RECEIVED MIDI DATA - CHANNEL INDICATOR BOARD															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Sysex	NoteOff																
TimeCode	NoteOn																
SPPointer	PolyAI																
SongSelect	ContChange																
Undefined	ProgChange																
Undefined	ChannelAI																
TuneRequest	PitchBend																
EndOfSysex	ResetCtrl																
TimingClock	LocalCtrl																
Undefined	AllNotesOff																
Start	OmniModeOff																
Continue	OmniModeOn																
Stop	PolyModeOff																
Undefined	PolyModeOn																
ActSensing	HELP-LINE->																
SystemReset																	

SEE README NOTES FOR INSTRUCTIONS

THE AMIGA MIDI-TOOLKIT UTILITY  
Copyright DATA-PAK Software  
[ version 1.00 (1990) ]

USE THE AMIGA'S MENU TO SELECT TOOLKIT MODE

*The best way to learn about MIDI is to use it...*



**New to the world of Midi? Superstar Jason Holborn has a word or two of advice for anyone starting out in the music biz**

played (and when) and if TFMX should wait for the sample to stop playing. Once a pattern has been defined, a simple STOP command terminates it.

One of the most impressive aspects of TFMX is the amount of control it offers over samples. Using its powerful macros facility you can define whether the sample should be looped, its length and so on.

You can also shape it still further by taking advantage of TFMX's sample manipulation tools such as envelope shaping \_ which allows you to create analog-type LFO effects – portamento and even vibrato (who needs an effects unit?).

Once you've created your game tune, you'll no doubt want to use it in your own programs – after all, that's the whole point of the exercise.

Unlike programs like Sound Tracker, TFMX doesn't include any source code for playing the tunes, instead you must call a separate player program from within your program. While this is great for Basic programmers, it is really

unacceptable for assembler programmers who "hit the metal". But then again, all you've got to do is disassemble the player program!

For a program that claims to be the



be all and end all of game music creators, it is surprising that Demonware didn't include some form of MIDI support. Even the PD composer Game Music Creator supports MIDI, so Demonware would be well advised to include it in a future release.

To be fair, the programmers have hinted that they may produce a professional version of TFMX that includes MIDI support, but that will

probably carry a much higher price tag.

As it is, TFMX is still a most impressive product that makes the job of composing music for games a considerably easier task. Those of you used to Sound Tracker may find the editing system initially daunting, but you'll soon grow to favour it. Highly recommended.

**TFMX  
£44.95  
The Software  
Business  
0480 496497**

**Next month: Reviews of Passport's new budget sequencer system Trax. Plus, of course, even more news and gossip from the Amiga music scene.**



If you only use your modem for typing out little messages to people, you are only skimming the surface. To get full use from your deck, you need to get into uploads and downloads.

Imagine you have heard of a really cool piece of PD software. You want it. Perhaps a PD library will advertise it in the magazine, so you post of your dosh ,wait a week and back it comes.

Wouldn't you rather have the software five minutes after deciding you wanted it? If you have a modem, you have the technology. All you have to do is ring up a local BBS and download it in seconds. This is the age of Information Interchange and you're part of it.

MOST bulletin boards have a software *bank* of sorts, where you can make a withdrawal or – even better – a donation. Some systems make rules about the number of withdrawals you can make, but if you can manage to stick to one upload for every download you'll be Mr. Popular.

To get the software, first find a local BBS. Get on-line and leave a nice message to the SysOp. He'll check you out, normally within a day, and grant you downloading privileges. You're all set.

Log on, with a blank disk ready and waiting to store your new software. Get to the section in the BBS where all the

## Before you upload...

If you are uploading a program on to a BBS there are several points to bear in mind:

- Do you have permission to do so? If you upload a copyrighted program, you are breaking the law.
- Have you included all the files belonging to a program? This means *all* data, binary and *readme* files?
- Have you done a thorough virus check on the software you are uploading? The consequences of not doing so are too horrible to contemplate.
- Have you archived all the files? Doing so means they take less time to upload, consume less storage space on the host system and take less time to download. Everyone is happy.

files are kept. Select the *Download* option. From a pull-down menu in your software, select the *Download* option too. All going to plan, you'll get a box with numbers, estimated times and sizes appearing. Now wait.

When you've finished, log off nicely. Now get to a SHELL and examine your prize. Chances are it's been archived. This means it's been squashed to take up less space, and therefore less downloading time. Before you can use

it, you'll need to un-arc it.

There are several popular arcing formats: .ARC, .ZOO, and .ZIP and .LZH to name four. To un-arc them, you'll need the matching software: PD programs such ARC, ZOO, ZIP and LHUNARC. These programs should all be available – in un-arc'd format – from the BBS. They should be the first programs you download.

In the old days some systems made the mistake of holding two un-arc'ing programs in their library: each archived by the other. Not much use.

Most of these utilities are CLI driven user-hostile beasts. Unfortunately, this is the way the comms world is. You're going to have to roll up your sleeves and do some work.

To get a brief inkling of a clue what to do, you use the programs from the CLI without parameters or with question marks. Nine times out of ten they will give you some helpful info.

They normally work along the lines of:

```
ARC -X FILENAME.ARC
```

All you have to do is sit next and watch as the program is re-constituted before your eyes. Of course, you only have to un-arc them once. From then on they are just like any other piece of software. Except you got it so fast.

ASCII file ends. Stop upload.

```
+++  
ATh
```

## Protocols

ANYONE who has been looking at the pull-down menus in their comms software will have noticed options such as X-Modem, Y-Modem and Z-Modem.

These wonderfully named options specify the different protocols which can be used to upload and download files. You may ask yourself why you actually need a protocol in the first place...

There are two types of data as far as Comms is concerned: Text and binary. Text files are what you're reading now – words. The best way to store the words for later perusal is to select a menu option such as "Ascii Capture". This will *spool* data to disk or ram, where you can examine it later off-line.

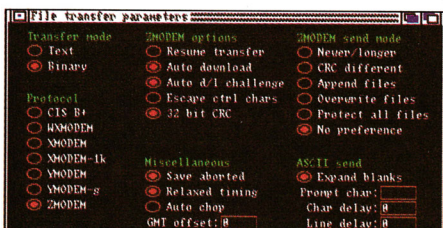
Binary data is what programs are made from. You can't download programs as text files without major problems. There must be a better way. There is, and it involves the use of X,Y

or Z-Modem. All the systems work by collecting the binary data into small packets, and sending it in bursts. The data is automatically checked, to prevent even a single byte from being corrupted.

You might not mind if a letter in a page of text is wrong, but if a machine code instruction in a downloaded program has got muddled, you can say hello to the guru.

Z-Modem is the best system, as it works fastest and can automatically switch on uploading and downloading. You should always use it if you can.

All the popular comms packages now have a Z-Modem option, though JrComm's is the best. Failing that, either of the other two protocols will work fine.



## Comms Gossip

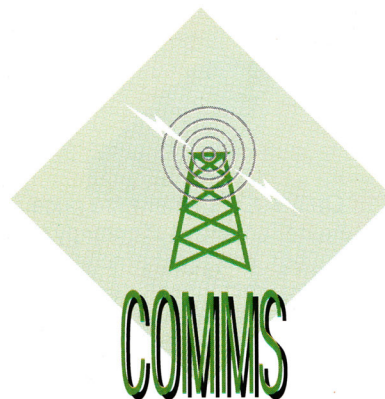
OOPS – just as we were going to press a few mistakes in last month's BBS list came to light. Please note changes in the listings for the following boards: Amiga Connection, Yukon Hol, Alliance (with the sexy Jessica).

Also Code-o-matic went off the ether following a nasty encounter with scourge of deck-cowboys everywhere, Mr. BT. Sysop Oli Smith has done a Macarthur and is back on a new line.

Continuing the 01 for Amiga saga we must report that both FAST and CBM are no longer persuing their fraud inquiries. This is due to the lack of any hard evidence.



*This is by no means intended to be an exhaustive list, but is as accurate and complete as was possible in the time available. Sysops are welcome to contact the magazine if they have details of further boards or if any of the details shown here are incorrect.*



**AMLINK BBS2**  
V21/22/22b/23 24Hrs  
Sysop: Martin Creighan  
**BARNEY'S RUBBLE**  
V21/22/22b/23 24hrs?  
Sysop: Jon Morby  
**MABBS**  
V21/22/22b/23 24hrs  
Sysop: Mark Caro  
Amiga orientated + PCBBC.  
**PLUG-OLE**  
V21/22/22b/23 24hrs  
Sysop: 'Pluggie'  
It's an experience everyone should try  
**LINENOISE**  
V22/22b 8pm-8am  
Sysop: Andy Bain  
**BREAKTHROUGH**  
V21/22/22b/23 24hrs  
Sysop: Jim Hamilton  
Everything  
**P'S & Q'S**  
V21/22/22b/23 24hrs  
Sysop: Alan Smith  
Upload bureau for typesetting.  
**ASPECTS**  
V21/22/22b/23 24hrs  
Sysop: Dave Gorski  
Excellent SIG for Amiga  
**D.I.E.**  
V21/22/22b/23 24hrs  
Sysop: Simon Thornton  
**ALLIANCE**  
V22/22b 10pm - 7am  
Sysop: Snoopy Co-Sysop: Jessica (kissy kissy)  
**HARLEQUIN**  
V21/22/22b/23 24hrs  
Sysop: Tony Grimshaw  
**061 for AMIGA**  
V21/22/22b MNP 4pm-11pm  
Sysop: Andy Grifo  
Over 200 files online  
**071 for AMIGA**  
V21/22/22b/23/32 24hrs  
Sysop: Tony Miller  
**HAZZARD BB**  
V21/22/22b/23 8pm-7am  
Sysop: Ben Amure  
**POLYNET BB**  
V21/22/22b/23 24hrs  
Sysop: Eileen McCabe  
Disabled orientated.  
**AMIGA CONNECTION**  
V21/23 7pm-9am  
Sysop: Paul Roffey (NOTE NEW NUMBER)  
**London Guest House**  
V21/22/22b/23/32 24Hrs  
Sysop: ???  
Yet another Paragon BBS  
**CIX**  
V21/22/22b/23 24hrs  
Sysop: Hangout for poseurs and manufacturers. Subs only  
**DOMAIN BBS**  
V22/22b 24hrs  
Sysop: David Boardman  
**HEALTH-DATA**  
V23v 24hrs  
Sysop: Dr Chris Dobbing  
Medically orientated.  
**DATASEL WANDERLAND**  
V23 24hrs  
Sysop: Ted Greene  
MUG. Also:  
**METROPOLIS**  
V21/22/22b/23 24hrs  
Sysop: Terry Sinclair  
**PACKET BBS**  
V21/22/22b 24hrs  
Sysop: Ted Batts  
Packet Radio orientated.  
**NO ESCORT REQUIRED**  
HST 24hrs  
Sysop: John Catlin  
**ORGANIC GARDEN**  
V21/22/22b/23 24hrs  
Sysop: Bob Campion  
Horticulturally orientated.  
**BIG BANG BURGER BAR**  
V21/22/22b/23 24h  
Sysop: Paul Roberts  
Belgium man I'll get my towel. AMOS section  
**PROMETHEUS**  
V23v 24hrs  
Sysop: Barry Spencer  
Astronomy orientated.  
**ARGUS PROJECT**  
V21/22/22b/23 24hrs  
Sysop: Graham Denman  
Radioactivity monitoring project.  
**PUBLISHING SHOP**  
V21/22/22b/23 24Hrs  
Sysop: Roger Booth  
Dtp and stuff  
**KERNOW BB**  
V21/22/22b/23 24hrs  
Sysop: Dave Randle  
An Opus board  
**INDEX LINKED**  
V21/22/22b 24hrs  
Sysop: Carl Ricketts  
CP/M as well as Amiga stuff here.  
**CLAPHAM JUNCTION**  
V21/22/22b/23 24hrs  
Sysop: Mark Lewis  
V22bis on 0234 213510.  
**C-SIDE**  
V21/22/22b 24hrs  
Sysop: Tim Hawkins  
C orientated.

**ANDROMEDA GALAXY**  
V21/22/22b/23 24hrs?  
Sysop: John Cheyne  
**BITMAP BROTHERS**  
V21/22/22b/23 24hrs  
Sysop: Mike Montgomery  
Well Chelmsford had to have something didn't it.  
**YUKON HO! BBS**  
V21/22/22b/23 24hrs  
Sysop: Mark Kerr Co-Sysop: Jim Rowan  
Pre release game demos and Echo Mail  
**ADRIAN'S BBS**  
V21/22 24Hrs  
Sysop: Adrian Wilson  
New but Ulster BBS  
**AMIGA BOARD**  
V22/22b/23 24hrs  
Sysop: Keith Bloom ('Crashman')  
**MAGNUM**  
V21/22/22b/23 24hrs  
Sysop: Keyop Troy  
**CASTLE BBS**  
V21/22/22b/23 24hrs  
Sysop: Neil Gossage  
**BLITTER**  
HST 24hrs  
Sysop: Derek Stracey  
**AMIGA SOUTH-EAST**  
V21/22/22b/23 24hrs  
Sysop: Kevin Cannell  
Amiga/ST/PC board  
**SHADES**  
V23 24hrs  
Sysop: Neil Newell (Hazeii)  
MUG. Plus another MUG: 'Trash' - type PCLINK at .  
**Knightowl**  
V21/22/22b 24Hrs  
Sysop: Paul Gooch  
Official UK rep. for Paragon.  
**END TO END**  
V21/22/22/23 24hrs  
Sysop: Glyn Cornfield  
**DARK HALO**  
HST 24hrs  
Sysop: Stuart Henderson  
**NORTH YORKS QBBS**  
V22/22b? 24hrs  
Sysop: Mike Wigmore  
Host of machines supported  
**PISTON POPPER**  
??? 24hrs  
Sysop: Peter Burnett  
**CV DATABASE BB**  
V22/22b 24hrs  
Sysop: Martin Jones  
Jobs/CV database.  
**LOFT**  
V21/22/22b/23 24hrs  
Sysop: Martin Carter  
**SCS ONE**  
V22b 24hrs  
Sysop: Chris Stone  
**GAUGONZOLA BBS**  
V21/22/22b 24hrs  
Sysop: Lawrence Freeman  
Amiga orientated.  
**BETELGEUSE 5**  
V21/22/22b/23 24hrs  
Sysop: Hugh Allan  
This is a board that has been described as zany.  
**KASHMIR'S BBS**  
V21/22/22b/23 7pm-8am  
Sysop: Kashmir perhaps?  
Runs on BBS-PC  
**Code-O-Matic**  
V21/22/22b 24Hrs  
Sysop: Oliver Smith  
Origin of the BBS Pub and home to many new ideas  
**GOURMET**  
V21/22/22b 24hrs  
Sysop: David Banes  
Catering Orientated.  
**FAMILY SKELETONS UK**  
V22b 24hrs  
Sysop: Bill Hamilton  
Genealogy orientated.  
**HAMNET**  
V21 24hrs  
Sysop: Joe Lawrence  
Amateur radio orientated.  
**HAL BBS**  
V21/22/22b/23/32 24Hrs  
Sysop: Ned Benjamin  
Another Paragon board  
**SIRIUS II**  
V21/22/22b 24hrs  
Sysop: Martin Brown  
**CLIFF'S CORNER**  
V21/22/22b/23 24hrs  
Sysop: Cliff Jones  
**END ZONE**  
V21/22/22b/23 24hrs  
Sysop: Adam Purnell  
**BOGGIN**  
V23/23v 9pm-8am  
Sysop: Russell Green  
**PLUS AND MINUS**  
V21/22/22b/23 24hrs  
Sysop: Tony Jowers  
**MISSION IMPOSSIBLE**  
24hrs Nottingham  
Sysop: Keith Barnes  
A Wildcat board  
**PCAMIGA BBS**  
V22/22b 6pm-M't  
Sysop: Mark Potter  
A fabulous furry Opus board  
**EUREKA GATEWAYS**  
V23/23v 24hrs  
Sysop: Carl Wright/Roger Miah

0243 379430 Emsworth  
0245 413728 Chelmsford  
0232 768163 Belfast  
0247 465385 Co. Down  
0268 510495 Canvey Island  
0274 547006 Bradford  
0276 691872 Camberley  
0292 671638  
0293 28464 Crawley  
0342 810905 East Grinstead  
0375 375190

**HQ of Channel-X.**  
MADNESS BBS V21/22/22b/23 24hrs  
Sysop: Ted Jackson  
**K-WOOD**  
HST 24hrs  
Sysop: Clive Waller  
**DEEP THOUGHT**  
HST/V32 24hrs  
Sysop: Paul Boakes  
Fidonet 2:252/105.  
**EDDIE'S BBS**  
V21/22/22b/23 24hrs  
Sysop: Eddie Seymour  
PCSTAmgBBC.  
**WHITE LIGHTNING**  
V22/22b 24hrs  
Sysop: Richard Darnell  
**FOX'S DEN**  
V21/22/22b/23 24hrs  
Sysop: Barry Freeman  
Subs for FULL access.  
**BIKE SHOP**  
V22/22b 24hrs  
Sysop: Dave Horton.  
**GABBS**  
V21/22/22b/23 24hrs  
Sysop: Stephen Cole  
Formerly Ape-House.  
**LAMPLIGHT QBBS**  
V21/22/22b/23 24hrs  
Sysop: John Lambon  
**MICRODEAL**  
V21/22/22b/23 24hrs  
Sysop: Mark Prigg  
Runs on Michton software surprise surprise.  
**CRITICAL MASS BBS**  
V23/23v 10pm-6am  
Sysop: Grahame Treliving  
Formerly Aardvark's Realm.  
**HEARTBEAT**  
Sysop: Sue Waring  
**Speed BBS**  
V21/22/22b 24 Hrs  
Sysop: Stephen Brazil  
Relatively new but expanding fast!  
**AMIGA SHACK**  
V21/22/22b/23 24hrs  
Sysop: Peter Debono  
Amiga and PC interest. Runs Tag-BBS  
**JOLLY FISHERMAN**  
V21/22/22b/23 24hrs  
Sysop: Martin Parker  
A Paragon Board (so it must be good)  
**EMPHYRION**  
V21/22/22b/23 9pm-6am  
Sysop: David Westron  
Formerly Swansea Amiga BB  
**Wayfarer**  
v21/22/22b/23/32 7pm - 7am  
Sysop: Herbie (for one reason or another)  
Good BBS but it gets lonely - give it a call  
**WELLAND VALLEY BBS**  
HST 24hrs  
Sysop: Eddy Ralphson  
**BAR**  
V21/23/23v 24hrs  
Sysop: Darren Sothill  
**DIGGERTEL #1**  
V21/22/22b/23 24hrs  
Sysop: John Balshaw  
**VIKING BBS**  
V21/22/22b/23 24hrs  
Sysop: Graeme Story  
Special areas for disabled and handicapped  
**TREASURE ISLAND**  
V21/22/22b/V23/V32 24Hrs  
Sysop: Jonathan Morris  
Still nothing to do with animals

```
ATZ
Modem initialised...running macros
Dialing.....
*Ringin*
*Ringin*
(11)hpc
CONNECTION ESTABLISHED AT 2400

--- YOU ARE CONNECTED TO THE COMMS FILE ---

Login please
ID: ARMITAGE
PASSWORD: *****
SUBJECT: Online software
CLARIFY?? Archiving, Uploads/ downloads

ACCESS PERMITTED

Pres Esc to continue.....
```



**S**OMEbody somewhere once said "The secret of comedy is timing". I can't remember who, but I bet you that Green knows. He seems to know all these famous sayings and who said them. I also bet that Green doesn't actually remember them all, but has a little book of famous sayings that he refers to in times like this.

Anyway, back to the matter in hand. The secret of Amiga coding is timing. I've had quite a few people say to me recently that they can get a picture on to the screen in machine code, but when they try and move it, it goes completely wrong, glitching all over the place and looking like a bad ST impersonation.

The problem is that on the Amiga – and most other computers for that matter – the screen is redrawn 50 times a second (in Europe, anyway). If you move something on the screen while the screen is being drawn, you will get half of the old picture (before moving) and half of the new picture (after moving). This leads to the glitches.

What you have to do is time your code so it only changes the screen when it is not being displayed. In other words, in the time between the end of drawing one frame and the beginning of drawing the next. This is called the vertical blank period.

You don't have much time to play with, for your movement routines have to be fast enough to execute and finish before the end of the vertical blank period. Other techniques – double buffering, for example – can give you more time to play with, but I won't go into that now.

There are several ways of making sure your code only runs in the vertical blank period. When that point is reached is reached the Amiga generates an interrupt, telling the 68000 to stop what it is doing and go and run a routine somewhere else in memory. You can set up your own Vertical Blank Interrupt (VBI) routine which handles the movement for you. This is probably the best way to deal with such a routine, but setting up interrupts is a bit fiddly, so I'll leave that until next month.

You will be pleased to know there is a much easier way to wait for the vertical blank period. A pair of hardware registers, VPOSr and VHPOSr, if read together show exactly where the video beam that redraws the screen is. All you have to do is read this and wait for the last line at the bottom of the screen (the 305th line down the screen on European Amigas).

The following piece of code will enter

a loop and wait for the vertical blank period:

```
VPOS equ $dff004
loop:

MOVE.L VPOS,d0          ; Get beam position
AND.L  #$1111111100000000,d0 ; Want vertical component
LSR.L  #8,d0             ; Shift it into lower byte
CMP.W  #305,d0           ; Have we reached the bottom?
BNE.S  loop              ; If not, loop back
```

You should put the code to animate your graphics after this routine. With a bit of luck it should work glitch-free. The obvious downside to this routine is that it wastes an awful lot of processor time. You should run all your non-screen updating routines, such as calculations, before it, as they don't need to be synchronised to the screen.

Of course, we don't have to wait for the bottom line. You could quite easily wait for the first line, the 17th, the 182nd and so on.

There aren't all that many useful applications of this technique, but here's an almost harmless example of another use of VPOS.

It changes the background colour at several positions down the screen to give a multicoloured background. This in itself is pretty pointless, as the copper can do a much better job of it, but it's an easy example from which to learn.

HAVING problems with strange unwanted vertical bars of rubbish appearing over your screen? If you are, you're having sprite problems. Here's one way to fix it. Add this instruction to the beginning of your code:

```
clr.l 0
```

and stick this on the beginning of your copperlist:

```
dc.w $120,0,$122,0,$124,0,$126,0
dc.w $128,0,$12a,0,$12c,0,$12e,0
dc.w $130,0,$132,0,$134,0,$136,0
dc.w $138,0,$13a,0,$13c,0,$13e,0
```

What this does is clear the only long-word in memory that is officially unused – at location zero – and points all the sprites to that empty sprite, so nothing is displayed.

You may have tried to turn off sprite

```
; Almost harmless example of VPOS wait
move.l 4.w,a6
jsr Forbid(a6)          ; turn off multitasking

stripes
move.w #43,d1
bsr vpwait              ; wait for scanline 43
move.w #3,colour0       ; change background colour to $003
move.w #93,d1
bsr vpwait              ; wait for line 93
move.w #5,colour0       ; change colour to $005
move.w #143,d1
bsr vpwait              ; wait for line 143
move.w #7,colour0       ; change colour to $007
move.w #193,d1
bsr vpwait              ; wait for line 193
move.w #9,colour0       ; change colour to $009
move.w #243,d1
bsr vpwait              ; wait for line 243
move.w #$b,colour0      ; change colour to $00b
move.w #293,d1
bsr vpwait              ; wait for line 293
move.w #$d,colour0      ; change colour to $00d

btst #6,$bfe001
bne.s stripes

move.l 4.w,a6
jsr Permit(a6)          ; turn on multitasking

rts

vpwait:
move.l VPOS,d0
and.l  #$1111111100000000,d0
lsr.l  #8,d0
cmp.w  d1,d0
bne.s  vpwait
rts

VPOS equ $dff004
Forbid equ -132
Permit equ -138
colour0 equ $dff180
```



DMA, and found that every now and then you get a stationary vertical bar running down your screen. If you turn off sprite DMA at the exact moment the sprite is being displayed it will continue to display the last line of sprite data forever.

To disable sprite DMA properly you have to use – yes, you guessed it – a VPOS wait loop. Simply wait for the last line, 305, before disabling the sprite DMA and you can avoid hitting the sprite, as it will never reach that low.



IF YOU are ever unfortunate enough to listen in to a crowd of programmers talking, they will sooner or later (usually sooner) mention how few raster lines their latest routine takes. Raster lines, in this particular instance, are a measure of time – it's the time taken for the video beam to trace one line across the screen. As it draws a whole screen of over 300 lines every 50th of a second, it's not a really large measure of time, in fact it's only 63 microseconds.

It's quite simple to do – turn the background colour to red, run your routine, and turn the background colour to black when it finishes. You will see a red flash on the screen, and you count the number of red lines. This gives you the speed of your routine in raster lines.

You have to run this routine continuously, once every frame, otherwise the screen will just flash once – for 1/50 of a second – and stop. You'll have to count the lines pretty quickly to make use of this play.

How do you do it? Yet another application for this wonderful VPOS wait routine. Here's the basic theory. I'll leave the code for you this time (and here's one I *didn't* prepare earlier...)

WAIT for line 150 (somewhere in the middle of the screen, to make it easy to see)

```
CHANGE BACKGROUND TO RED
BRANCH TO YOUR SUBROUTINE
CHANGE BACKGROUND TO BLACK
WAIT FOR LINE 140 (to make sure
one whole frame has appeared)
JUMP BACK TO BEGINING.
```

Why do I wait for line 140 before jumping back to the beginning? If your routine is *very* fast it may only take a fraction of the line to finish. In this case, it will jump back to wait for line 150, and as it will still be line 150 it will go on to execute a second time in one frame, giving a misleading raster line time.

If you're feeling bored you can experiment with different colours instead of red. You've got 4095 to try (\$000 would be a little pointless).

There are a few flaws with the raster line timing method. You'll still find programmers saying "My blitter stack interrupt routine takes that" (holding forefinger and thumb a very short

distance apart) "much time". This is a bit pointless, as you don't know whether he is using a 9 inch monitor or a 26 inch monitor.

Go up to them and say, "Yes, but how many lines is that?". You can look very smug and they'll be very embarrassed. Ten to one they're using a TV and can't count the individual lines without getting a migraine.



THERE IS nothing more annoying than a piece of code that just refuses to work. It's a really good feeling when a routine works first time, but with long and complex ones that doesn't happen very often.

A good 80 to 90 per cent of bugs can be trapped with a decent debugger, such as Monam 2 from HiSoft, but some bugs are so cleverly hidden and so perfect in design that you have to resort to very special tactics to dig them out.

Here, for the first time, I reveal some of these alternative debugging practices:

▲ **Print out your source code:** You will often find the problem is obvious by the time it is completed. This doesn't have anything to do with what's printed on the paper, it's just that the time taken to print out the source gives you time to think.

You really need a cheap old noisy dot matrix printer for this, laser printers work too quickly, and they don't make the right noise.

Some people have successfully debugged by removing the ribbon and printer paper on their machine, printing nothing. The time delay and the noise are still right, but you don't waste valuable printer paper and ink.

▲ **Invite a friend round:** Every coder knows some annoying little person who comes round, stands behind you looking over your shoulder, who knows almost nothing about programming but comes out with statements like "Shouldn't that be a D0, not an A0?" every now and then while your typing.

What's even more annoying is that they are more often than not right. A useful debugging technique, but it has a high embarrassment factor.

▲ **The kludge:** This is the dirtiest of debugging techniques. Frowned upon by almost every decent programmer – but a lot resort to it in a dire emergency – it involves logic which goes something like this:

This code is theoretically perfect so it should work. It doesn't. If I insert something that is theoretically unnecessary, or even theoretically wrong, it may, with a bit of luck, fix the problem.

Good examples of kludges are



## **Jolyon Ralph cures the coding blues with his previously top secret bumper bug-busting hints**

randomly clearing registers at the beginning of a routine, or changing the length of a DBRA loop by +1 or -1 "just to see what it would do". The whole kludge ethic is based on the philosophy that "As long as the program works, I don't have to understand *why* it works".

Naturally, this is rather repulsive to most programmers, except when faced with a tight deadline involving sums of money. A very few programmers code purely by the kludge method, leading to unbelievably badly-written code. I've seen some of their games.

▲ **The US foreign policy debugging method:** This was something I developed when programming the Spectrum in Z80. I noticed that it was taking 20 per cent of my time to write a routine, and 80 per cent to debug it. I also noticed that about 40 per cent of my routines worked first time (If only it was that way now!).

So I worked out that debugging was a waste of time. All I had to do was write a routine, if it worked, great. If it didn't, nuke it and start again.

If I could narrow down the error to a certain line, it was a simple matter of deleting the line, and the three lines above and below it, and rewriting it.

This technique definitely works, but the only problem is it makes your fingers ache.

**Next month: More of the same, with loads of interesting facts about interrupts and copperlists. Don't you just love it? Answers on a postcard please.**



N

Picture this. The latest version of the Conlig gazette lies before you, resplendent in hi-res interlaced mode on your wonderful monitor.

Your subscribers, recently reaching the heady heights of double figures, are eagerly awaiting the next edition complete with witty insights on the Ring Road and severe condemnations of Bangor Marina.

This is the point at which you realise that – short of buying an extra 20 monitors and becoming the first useful cable network – you have to find some way of getting it on to nasty old fashioned lo-tech paper.

Now, I don't know you really well, mostly we've never met, but I suspect that you're the sort of person who would be only truly happy with at least 300 dpi output ( about the resolution of a laser printer) and preferably a lot better. Presumably you reckon you can't afford this. You may be wrong.

If your DTP package is capable of producing Postscript output – in other words you have Pro Page or Pagemaster2 – you are, as they say, in business.

Postscript is a language. Unlike C,



Pascal, BASIC and Swahili it is dedicated to the description of shapes. All the nice curves of your 72 point fonts, all the precise and functional beauty of your keylines ,are just a few sentences in Postscript.

The advantage of Postscript is that because it describes the shapes rather than the individual blocks that make up the shapes, there is much less to it, and yet it is more powerful.

For example, the German word *Manuskripteinsendung* (literally translated “manuscript in sending”) is precise but not as easy to say, write or print as the English equivalent “submission”. Each item of a postscript file is likewise the equivalent of countless bits of data in a bitmap. The information density is greater. This means the files are smaller, print faster and are unlikely to give your output device headaches.

Of course your output device is consequently going to cost twice as

much to do the same job.

So the alternative to taking out a mortgage on your immediate family to pay for such a device is to use someone else's. Cunning eh? This is where the most important feature of Postscript comes in – it is a universally recognised language – PCs can speak it, Macs can speak it – it's like Esperanto, only it works.

Since most of the backward thinking outdated publishing in this country is done on either PCs or Macs using Postscript devices there is wide support for this format. Unfortunately at the moment you are unlikely to find a DTP bureau that will handle Amiga disks – most of these silly people haven't even heard of Amigas!

Obviously a high degree of cunning is called for. You have to fool these people into thinking they are dealing with an ordinary PC or Mac file. The best way to do this is to select an IBM format output, and print your document to disk

*For those of you who asked, here is a brief glimpse of those wonderful scalable fonts from Gold Disk's Outline Fonts package.*

*Not only are they a useful addition to PagesetterII, Pro Page or Prodraw, but they even come with a nice conversion program that will turn them into a bitmap font (as used by almost every art package going and a*

good number of word-pros) at virtually any point size.

*The range includes additional variants to the ones included with the Gold Disk packages and lots of others besides like Avant Garde, Bookman, Century Schoolbook, Courier, Palacio, Zapf Chancery and the incredibly useful Symbol and Zapf Chancery fonts.*

*A sample collection is reproduced*

*here for your entertainment. I'd like to point out that this output – from a Panasonic KX-P4420 under HP Laserjet emulation – has obviously been optically scanned, which will undoubtedly introduce some distortion. The illustration should be taken as a guide to the style and only loosely as an indication of the quality of output possible.*

This is Avant Garde Gothic book ABCDEFghijkp123!"£\$&  
and this is ITC Bookman Demi ABCDEFghijklmp123+-  
**here is bit of Courier Bold CDEFghijmno23!£\$&**  
***followed by a spot of Courier Bold Oblique ABcd***  
Palacio is always popular ABCDEFghijklmnopqrs123!"£\$%  
*As is Zapf Chancery Medium Italic ABCDEFghijklmnop123456!"£\$¢*  
Don't forget you get Triumvirate Condensed ABCefghij1234!"£%&  
And Zapf Dingbats ☆☉⊙✻❄️♾️➡️✔️✓✕✖✗◻◼◽◾▿◆♦✚✛✜✝✞✟✠✡☀️

***Here are  
the Outline  
fonts, as  
produced  
by a  
Panasonic  
laser  
printer***

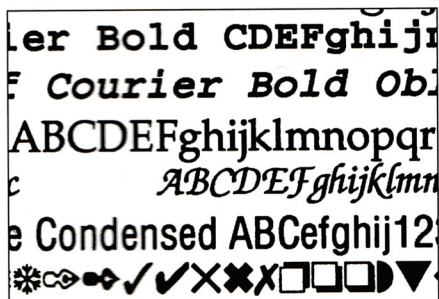


as an EPSF (Encapsulated PostScript File).

This means it can be read in to many applications on lesser computers which have a Postscript device attached to them. (Important note: When using Pro Page don't select the option to include bitmaps. This would enable another Amiga graphics system to display a representation of your file, but will only confuse Macs and PCs).

Once you have the file the only problem left is to get it on to a Mac or PC disk. Mac disks are a bit tricky because their floppy drives are designed completely differently. The only way to get around this problem is to buy a Mac floppy drive and the excellent Mac-2-Dos (reviewed in the June issue). This is a bit on the expensive side.

The easier way is to get hold of a PC disk transfer program. There are quite a few around, though the most popular are Dos2Dos and Crossdos. More problematic, but cheaper, is the shareware equivalent, Messydos.



The bureau solution should mean not only a professional job at a fairly reasonable rate, but also the opportunity that no home user could hope to do (unless they are really rich, in which case they should contact me without delay) and still have enough cash to buy *Amiga Computing* every month – use colour.

Most bureau will be able to output colour Postscript files on to film via a linotype. To give you some idea of the quality of output that gives you, these pages were written to film at 1000 dpi, before being sent off to the printers. This may get a little steep but can save a minor fortune if you desperately need 100 copies of a full colour brochure (who knows, the more entrepreneurial of you may be subcontracted by businesses, colleges or old schoolfriends to subsidise your Amiga cravings).



To bring you back to earth though – who really needs it? Most of your work is going to look OK at laser printer or even 24-pin quality. Using Agfa's CompuGraphic fonts, even the lowliest 9-pin can produce excellent results. Don't think that every letter to the

THE following is a list of bureaux that specialise in PC/Mac Postscript, but may be conned into outputting your efforts if you can get them in Postscript format on a Mac or PC floppy.

Birmingham Typesetting (021-565 0565)

Communitytype (0533-702270)

Onset (061-368 5073)

Printronic (071-240 8301)

North Computer E.P. (0604-33464)

If you have a modem you should check out the on-line typesetting bureaux in the Comms section (P's and Q's and Publishing Shop).

milkmann needs to be a masterpiece of state of the art printing technology.

When using a laser printer, or when sending off work to be output by a bureau on a laser printer, always remember that because of the nature of these devices a fairly large margin around the edges of an A4 sheet are unavailable.

The exact width of these margins varies slightly from printer to printer, but a rough guide is to leave one inch both top and bottom and at each side.

Also, if you are using a laser printer you may have trouble printing out a complete page. A great many lasers only come with a half meg of memory, which isn't enough for complicated artwork plus scalable fonts.

The only ways to get around this problem is to reduce the density of the printout – the density effects the output resolution from around 75x75 to 300x300 dpi – simplify the page, or buy more memory for your printer.

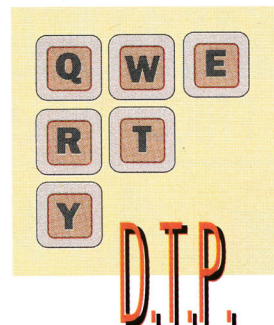


Extensive research into the fathomless pits of typesetting bureaux led to only two companies who didn't say "Omega what?" when confronted

## OOPS!

WHILE compiling a state of the art dissection of the DTP scene there is always the chance that some alien shape-shifters will attempt to interrupt the flow of information. Such an event happened last month as I was attempting to give you details of HB marketing, official Gold Disk support in this country.

Somehow a completely fictitious invoice with a totally inaccurate phone number came to hand, so apologies to all those who tapped in all the digits only to receive the BT equivalent of a raspberry. The correct number is, of course, 0753 686000.



**What you design is only as good as you can print it. Nic Veitch uncovers professional output for the financially disadvantaged**

with the dilemma of the Amiga DTP'er.

The first of these highly enlightened bureaux is Compuvision (0642- 85079). They can only offer output up to laser quality, but seem to be quite happy with anything you want to throw at them (Postscript, Ascii text...).

The second is Alternative Image (0533 440041), who will handle linotype output of Amiga files. They will take Amiga floppies, but it would be a lot easier – and consequently cheaper – if you could supply Mac or PC disk.

Remember, it is always wise to ring up these chappies beforehand and let them know exactly what you are looking for. They are generally quite helpful and will tell you what is possible and how best to do it.

There used to be a lot more Amiga bureaux, but several seem to have gone out of business. If you own or know of any others please get in touch.

**THANKS must go to Compuvision, DTP Today magazine and the Amiga Business Centre who helped track down suitable bureaux. This report has been compiled under the "Aj wants to go home now" reporting restrictions.**



# Evesham Micros

- ALL PRICES INCLUDE VAT & DELIVERY -

Buy with confidence from one of the longest established companies in their field, with a reputation for good service and prices. We have invested heavily in a computer system to enable our Telesales staff to provide up-to-the-minute stock information, coupled with highly efficient order processing. Our fully equipped Workshop enables us to carry out almost any repair on our premises. We feel sure that you won't be disappointed if you choose Evesham Micros.

## AMIGA SPECIAL DEALS

All our A500 Packages include the following :

Goldrunner	Jaws	Wordwright (w/processor/
Leatherneck	Defcon 5	Nigel Mansell's Grand Prix
Karate Kid II	High Steel	Better Dead than Alien
Battle Squadron	Night Walk	Super Huey

Amiga 500 SCREEN GEMS Pack includes 'Night Breed', 'The Beast 2', 'Back to the Future 2', 'Days of Thunder', 'Deluxe Paint 2' and TV modulator ..... £379.00

Amiga 500 BATPACK includes 'Batman' the game, 'New Zealand Story', 'F-18 Interceptor', 'Deluxe Paint 2' and TV modulator ..... £379.00

Amiga 500 FLIGHT OF FANTASY Pack includes 'F-29 Retaliator', 'Rainbow Islands', 'Deluxe Paint 2', 'Escape from the Planet of the Robot Monsters' and TV modulator ..... £379.00

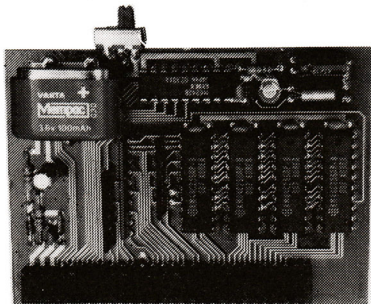
### EVESHAM MICROS SPECIAL AMIGA PACK OPTIONS :

1MB (Screen Gems or Batpack or F.O.F.) includes our 512K RAM upgrade with clock fitted ..... £409.00

512K (Screen Gems or Batpack or F.O.F.) With Drive includes our 3.5" External Drive ..... £430.00

1MB (Screen Gems or Batpack or F.O.F.) With Drive features our 512K RAM upgrade plus our 3.5" External Drive ..... £465.00

## AMIGA A500 SOLDERLESS RAM UPGRADES



# 512K

## RAM UPGRADE

# ONLY £37.95

including VAT & delivery

### 512K RAM/CLOCK UNIT FEATURES :

- ☆ Direct replacement for the A501 expansion
- ☆ Convenient On / Off Memory Switch
- ☆ Auto-recharging battery backed real-time Clock
- ☆ Compact unit size : Ultra-neat design
- ☆ Only 4 low power consumption FASTRAMs

512K RAM Expansion also available without clock for only  
**£32.95**

**NEW!**  
**1.5MB**  
**RAM**  
**BOARD**

- ☆ Fully populated board increases total RAM to 2MB !
- ☆ Plugs into the trapdoor expansion (as with 512K unit)
- ☆ Auto-recharging Battery Backed Real-Time Clock
- ☆ Socketed FASTRAM ICs for accommodation up to 1.5MB

Unpopulated RAM Expansion Board with Clock ..... £39.95

RAM Board with Clock, with 512K FASTRAM installed ..... £64.95

RAM Board with Clock, with 1Mb FASTRAM installed ..... £84.95

RAM Board with Clock, with full 1.5Mb FASTRAM installed ..... £99.95

N.B. : Requires Kickstart 1.3 to operate - Kickstart 1.3 Upgrade available from us for £29.95

## AMIGA ACCESSORIES

Philips CM8833 colour monitor inc. cable ..... £249.00  
Vidi-Amiga video digitiser package ..... £95.00  
Vidi-Chrome colour accessory for above ..... £16.00  
Mini-RGB splitter accessory unit for VIDI ..... £59.95  
MiniGEN Genlock Adapter ..... £95.00  
KCS Power Board PC emulator package ..... £319.00  
5 1/4" External Floppy Drive 40/80 track switchable (360/720K) with throughput ... £99.00  
Contriver Hi-Res Mouse Package including mouse mat & mouse pocket ..... £22.95  
Naksha Mouse Package (also compatible with Atari ST and Amstrad PC) ..... £28.95  
Roland CM32L Sound Module ..... £350.00  
Roland CM32P PCM Sound Module ..... £430.00  
Roland PC200 Keyboard for above modules .. £160.00  
Kickstart 1.3 Upgrade pack ..... £29.95  
Amiga Replacement Power Supply Unit (Genuine Commodore Amiga Type) ..... £39.95  
Amiga A500 Dust Cover ..... £ 4.95

## BOOKS

Amiga BASIC - Inside and Out ..... £18.95  
Amiga for Beginners ..... £12.95  
Tricks and Tips for the Amiga ..... £16.95  
More Tricks and Tips for the Amiga ..... £14.95  
Amiga Disk Drives - Inside and Out ..... £27.95

## PRINTERS

Prices include VAT, delivery and cable

**EVESHAM MICROS SPECIAL OFFER - ALL STAR PRINTERS INCLUDE 12 MONTHS ON-SITE MAINTENANCE !**

Star LC10 top-selling 9-pin printer ..... £159.00  
Star LC10 Mk.II improved speed 180/44 cps ..... £199.00  
Star LC200 replaces LC10 colour, features bottom feed option and push/pull tractor, 180/45 cps ..... £209.00  
Star LC24-10 24 pin, excellent value ..... £239.00  
Star LC24-200 improved version of LC24-10: 200/67cps bottom feed option and push/pull tractors ..... £249.00  
Star LC24-200 Colour version of above LC24-200 ..... £289.00  
Star FR-10 9pin 300/76cps 16 NLQ fonts ..... £369.00  
Star FR-15 as FR-10, wide carriage ..... £429.00  
Star XB24-10 24pin; 4 SLQ, 25 LQ fonts ..... £429.00  
Star SS10DM c/s/feeder for FR10/XB24-10 ..... £100.00  
Star SS15DM c/s/feeder for FR15/XB24-15 ..... £170.00  
Star LC15 wide carriage vers. of LC10 ..... £299.00  
Star LC24-15 wide carriage vers. of LC24-10 ..... £369.00  
Star Laserprinter 8, 8ppm/300dpi ..... £1329.00  
Olivetti DM100S 9 pin printer 200/30 cps price includes 1 year on-site warranty ! ..... £129.95  
Olivetti cut sheet feeder for DM100S ..... £79.95  
Olivetti PG-306 laser; 512K RAM, HP compatible ..... £976.35  
Olivetti PG-306 as above, with PostScript fitted ..... £1749.00  
Epson LX400 budget 10" ..... £159.00  
Epson LQ550 10" 24pin ..... £349.00  
Epson LQ400 24pin printer ..... £229.00  
Panasonic KXP1180 multi-feature 9 pin ..... £179.00  
Panasonic KXP1124 24pin printer ..... £259.00  
Panasonic KXP1624 24pin wide carr. printer ..... £399.00  
Panasonic P36 cut sheet feeder for KXP1124 ..... £109.00  
NEC P2+ 192/64cps multifont ..... £299.00  
Hewlett Packard Deskjet 500 ..... £489.00  
Hewlett Packard Laserjet III superior 300dpi laser ..... £1595.00

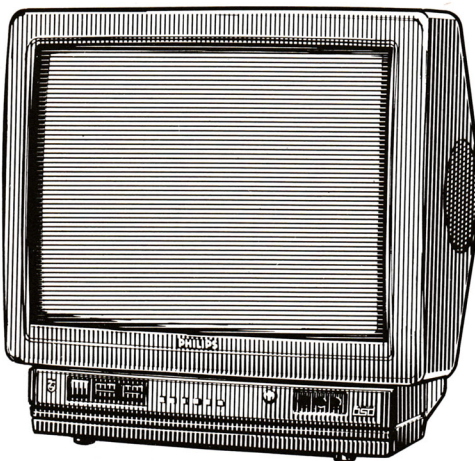
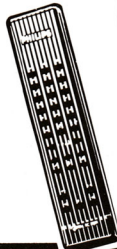
## PHILIPS 15" FST TV/MONITOR (MODEL 2530)

With its dedicated monitor input, this model combines the advantages of a high quality medium resolution monitor with the convenience of remote control Teletext TV - at an excellent low price !

- ✓ Suits ST or Amiga (cable supplied)
- ✓ Fastest Teletext ; on screen graphics
- ✓ Full Infra-red remote control
- ✓ SCART Input/Output Connector
- ✓ Audio/Composite Video inputs
- ✓ 60 TV tuner presets
- ✓ Headphone private listening jack
- ✓ External aerial input (loop supplied)

**£269.00**

Includes VAT, delivery and computer connection lead



## COMMODORE A590 HARD DRIVE

Good quality Commodore Hard Disk unit, including its own PSU and built-in cooling fan. Features sockets for up to 2Mb of on-board FASTRAM expansion (see below). 80ms Access time, with up to 2.4Mb/sec transfer rate. Autoboots when used with Kickstart 1.3.

A590 Hard drive (20Mb) ..... £379.00

**NEW! - 40Mb A590**  
Specially upgraded model for only .. £499.00

### A590 RAM Upgrades

Upgrade kit comprising of D-RAM FASTRAM IC's. We will fit the upgrade free of charge when bought with an A590.

A590 512K RAM Upgrade kit ..... £31.95

A590 1Mb RAM Upgrade kit ..... £59.95

A590 2Mb RAM Upgrade kit ..... £99.95



## AMIGA SOFTWARE

### WORDPROCESSING

Protext .....	£69.95
Kind Words Version 2 .....	£39.95

### ACCOUNTING

Digitia Home Accounts .....	£18.95
Digitia Cashbook Controller .....	£39.95
Digitia Final Accounts .....	£23.95
Digitia Cashbook Combo .....	£55.95
SBA Cash .....	£62.95
SBA Extra .....	£89.95
SBA Plus .....	£179.00

### GRAPHICS

Deluxe Paint 3 .....	£59.95
Deluxe Video 3 .....	£59.95

### MUSIC

Dr.T Tiger Cub .....	£84.95
Music-X .....	£110.00

### PROGRAMMING

AMOS Game Creator .....	£37.50
AMOS Sprites .....	£11.95
HiSoft Lattice 'C' .....	£179.00
GFA BASIC Version 3 .....	£39.95
GFA BASIC Compiler .....	£34.95
HiSoft Devpac 2 .....	£44.95

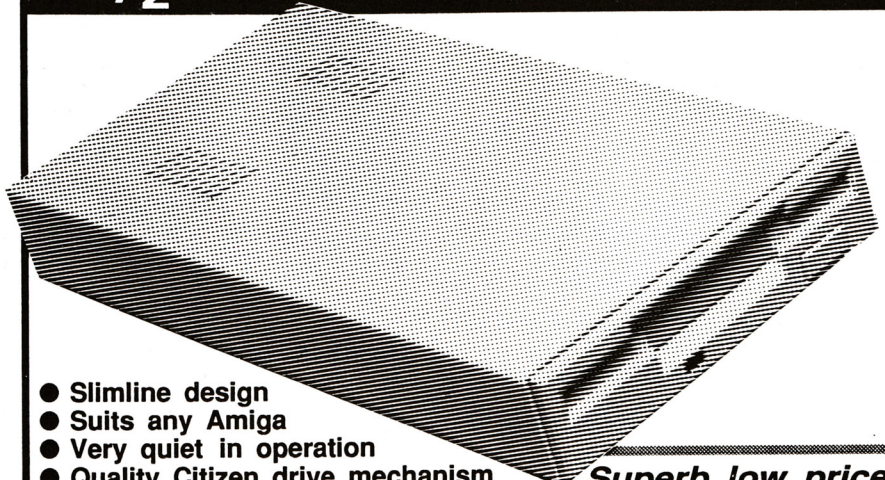
### GAMES AND SIMULATIONS

Battle Squadron .....	£16.95
Damocles .....	£18.95
Emlyn Hughes .....	£18.95
F-19 Stealth Fighter .....	£22.50
F-29 Retaliator .....	£18.95
Kick Off 2 .....	£18.95
Sideshow .....	£14.95
Treasure Trap .....	£16.95

### MISCELLANEOUS

Super-Plan Spreadsheet .....	£74.95
Superbase Personal Version 2 .....	£69.00
Digitia DG-Calc .....	£31.95

## 3 1/2" EXTERNAL DRIVES



- Slimline design
- Suits any Amiga
- Very quiet in operation
- Quality Citizen drive mechanism
- On / Off switch on rear of drive
- 880K Formatted capacity
- Throughport connector
- Long connection cable for location either side of computer
- Fully guaranteed for 12 months

**Superb low price!**

**£59.95**  
including VAT  
and delivery

5.25" External 40/80 Track Drive also available, only £99.00

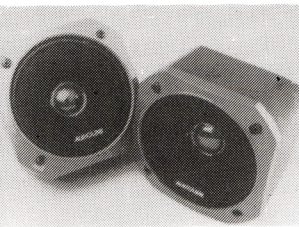
## Evesham Micros Special New Products

### 'TESSA'

twin ergonomic  
stereo speakers,  
amplified

#### HEAR THAT STEREO!

Your Amiga produces excellent quality hi-fi stereo sound. Enjoy stereo sound reproduction to the full with this great new twin speaker system! Incorporates a specially designed, good quality amplifier with adjustable volume control, to obtain the best sound.



**ONLY £34.95** including VAT  
and Delivery

### AMIGA A500 REPLACEMENT P.S.U.

Genuine CBM Amiga A500 type replacement power supply unit. Good quality switch mode type. Provides a higher power output rating than the original Amiga PSU, so that external drives receive an increased supply. Super low price!



**ONLY £39.95**

### MIDI INTERFACE

#### GET CONNECTED!

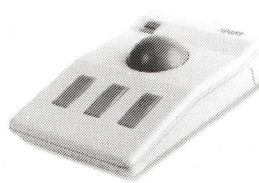
Our new fully compatible, high quality MIDI interface connects directly with the Amiga serial port and provides IN, OUT and THRU ports for good flexibility. Features LED indicators on each port to assist ease of use and also for diagnostic purposes. Superb compact design.

**ONLY £19.95**

### KRAFT TRACKBALL

**EFFICIENT MOUSE OPERATION -  
IMPROVED GAME PLAY!**

Very high quality trackball, directly compatible to any Amiga, ST or CBM64, plus many others. Operates from the mouse or joystick port, and features selectable drag control / autofire button for versatility and better action. Left or right hand use, with total one handed control. Top quality construction and opto-mechanical design, delivering high speed and accuracy every time. No driver software required!



**ONLY £44.95**

### STEREO SOUND SAMPLER

#### S-S-SAMPLE THIS!

Offering full compatibility with almost any Amiga audio digitiser software, our Sound Sampler features excellent circuitry, yielding professional results. The main A/D converter gives a digitising resolution of up to 50 KHz, with a fast slew rate. Two phono sockets are provided for stereo line input, plus an option for microphone. Adjustable gain is achieved with built-in control knob. Complete with public domain disk containing sound sampling applications / utilities.

**ONLY £29.95**

## Evesham Micros

RETAIL SHOWROOMS

63 Bridge Street  
Evesham  
Worcs WR11 4SF  
☎ 0386-765180  
fax: 0386-49761  
Open Mon - Sat, 9.00 - 5.30

5 Gilson Road  
Cambridge CB1 2HA  
☎ 0223-323898  
fax: 0223-322883  
Open Mon - Sat, 9.30 - 6.00  
Specialist Education Centre

1762 Pershore Road  
Cottrelidge  
Birmingham B30 3BH  
☎ 021-458 4564  
fax: 021-433 3825  
Open Mon - Sat, 9.00 - 5.30

**ALL PRICES INCLUDE VAT AND DELIVERY**  
Same day despatch whenever possible. Express Courier delivery £5.00 extra.

MAIL ORDER DEPARTMENT

Unit 9 St Richards Rd, Evesham, Worcs WR11 6XJ



Call us now on ☎ 0386-765500

8 lines, Open Mon - Sat, 9.00 - 5.30. Fax: 0386-765354  
Technical support (open Mon - Fri, 9.30 - 5.30): 0386-40303



Send an Order with Cheque, Postal  
Order or ACCESS/VISA card details.  
Allow 10 days personal cheque clearance.

Government, Education & PLC orders welcome  
All products covered by 12 Months Warranty  
All goods subject to availability, E & O.E.



**O**NE of the things the Amiga artist has to appreciate, and all too often doesn't, is just how easy it is for him to manipulate repeated shapes – namely, brushes. Every single tool in DPaint uses brushes, making it not only incredibly easy to paint with, but also jolly consistent.

Let me give you an example of what I have just said. Set up a 16 colour lo-res screen, pick one of the preset circle brushes from the top right of the toolbox and then draw a Small Picture with it. ("Smileys" are always popular, although some people prefer drawing normal faces. Figure I gives an example of a "Small Picture").

Select "cut rectangular brush" and cut the thing out. Now, ensuring that your background colour is black, hold down the right mouse button and move the brush over the original picture, erasing it.

This is an important technique to remember – holding down the right mouse button paints with the brush's silhouette, coloured the same as the background colour. This is almost always true, but for the moment, don't worry about the "almost".

You will have noticed that when you cut the brush out the paint mode reverted to matte, and the dotted freehand tool was activated. This happens every time you cut a brush, and is worth remembering – it is very easy to ruin a picture by cutting out a brush and only realising you're no longer in "shade" mode when you've slapped a bright yellow circle over the past six hours' work. I know, I've done it many a time.

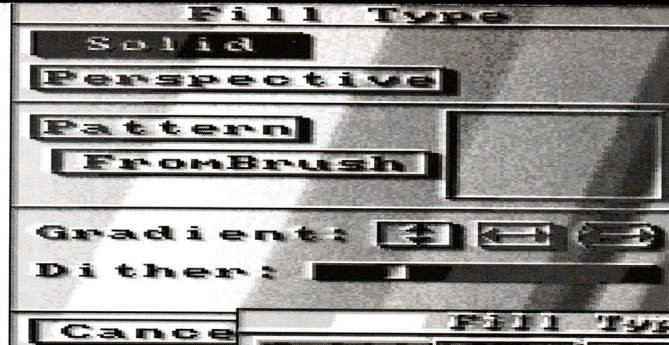


Pick the line tool, and drag out a line. It will be drawn with your picture instead of dots. Although it's very clever, it's not particularly useful. So press "p" to bring up the palette selector, set the second colour to white (it's normally that horrible fleshy colour) and the very last one to black.

Spread the white to the black to

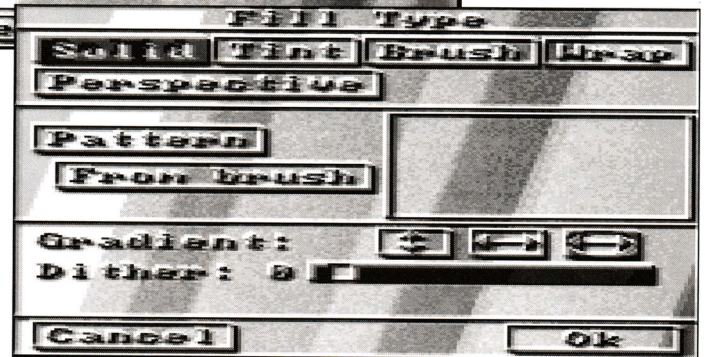


**Figure II: Logo vandalising**



**Deluxe Paint II**

**Deluxe Paint III**



create a series of graduated greys, and then click "range" and select white. You have now created a range of colours, with which we may do many interesting things...

Click the right mouse button on the line tool. A requester pops up, not entirely dissimilar from one of the two in Figure II. What we're going to do is break up the line into a series of dots so that the brushes are spaced out more.

If you are using DP II, select "Relative", enter an arbitrary number into the "number" box – use 16 for the moment – and select "on". DP III users should select "N Total" and enter 16 into the box next to it.

Pick "OK" and the requester goes. Try drawing a line again – you will notice that this time not only is the update faster, but also that the line is made up of only 16 "points" in total. The "Relative" or "N Total" option tells the computer to draw only a certain number of brushes at roughly equal distances from each other.

Now go back to the requester and select either "Absolute" or "Every Nth dot" and enter "16", according to which version you're using. Try drawing a line of roughly the same length. This time, however, instead of having 16 points in the line, the computer draws it so there is a point every 16 pixels along.

One of the nicest things about DP, as I have mentioned previously, is its consistency. And that means that what has just worked on the straight line tool should work on the box tool (it does). It also works on the polygon, curve, circle and ellipse tools. Dan Silva deserves a medal.

For enhanced enjoyment, pick the cycle mode – F7 if you have a keyboard – and, with either "Absolute" or "N total" set to 16, draw a curve or line on the screen. Wow! You now have a completely tacky picture which you hope no one will ever see (I can't work miracles – this is only the second month!).

There are still a few other tricks a

brush has up its proverbial sleeve, and these I shall discuss now. You will require a clean brush, so draw a new one, cutting it out with a one pixel border around it so that the box the "cut" tool produces touches, but doesn't go over, the brush.



Now click the right button on the "fill" tool. Either the top or bottom of Figure III magically appears on screen. Select "from brush" and "pattern" to set up a fill pattern from the current brush, then click "OK" and choose a filled shape tool, such as a filled circle.

Draw your favourite-sized circle on screen, and marvel at its patterned texture. On a less sarcastic note, it is worth remembering that the fill pattern will fit in with the original brush position.

If you, understandably, don't grasp what I'm trying to explain, try drawing a filled shape that partially covers the original brush. You will notice that there is no overlap where the two coincide.

I wish someone would have invented words to describe all these things – I mean, even something as petty as pulling a funny face once a year gets the word "gurning", so I don't see why "the overlap you don't get between a patterned fill and the original brush pattern" doesn't.

It's hard to explain – please note that the DP manual doesn't bother trying. Having a word for it would make it so much easier. Grumble, grumble.

Ha! Got it – what I mean to say is that the position of the pattern in the fill is relative to the original brush position and *not* to the corner of the fill area. If you still don't understand, you'll find out one day the hard way.

The other fill options are not really for us at the moment. Leave them be, they're not going anywhere. A future article will reveal their hidden intricacies.

Meanwhile, back in DPville the more perceptive will have noticed a menu



pertaining to brushes (in best Rowan Atkinson voice) known as the "Brush" menu. Here, all the seemingly tasteless brush warping tools are stored.

It is important to know how to use these inside out in order to produce any effects that may be considered original.

First, cut a new brush. It would be advisable to make it quite large, about 200 by 100 pixels, otherwise the effects will confuse the image. You should paste a copy of this on to the spare page so you can revert to it later if need be.



The first tool to play with has to be the freehand resize. Everyone has used this at sometime or other, and any serious artist is going to need to eventually. Try it – hold down the left button, and move the mouse around to change the brush to any size you want.

The mathematics of the procedure are instantaneous, and can be very useful in that you know what your resized brush will look like. Unfortunately, it usually ends up either as a cross-section of Legoland or a gritty mess. There is, however, a way of getting around this.

Curiously enough, the options for this are not in the brush menu – they are in fact in the perspective menu, tucked away under "extras".

First the antialias should be set to "high" and the perspective centre positioned in a clear area of the screen – on the spare page if possible. You should then select "do" from the perspective menu – or enter from the keyboard – and position the centre of the brush grid over the perspective centre.

Now use the # and ; keys to move the brush into or out of the screen. You must use the grid to work out when the

brush is the right size, and when it is, slam the left (or right!) button.

The computer draws your brush on to the screen.

This can take up to a minute or more, but the result is worth it. The brush which you have just created is not only resized with correct proportions, but also is antialiased so that there are no jagged lines and only a minimal loss of detail.

Why not use this all the time? Well, first you need some blank space to render the brush into. This shouldn't pose too many problems. The second, and more pressing problem, is that you cannot change the palette after using this method.

The reason for this is that antialias uses extra colours that may not necessarily be used in the original brush. What happens is that when two pixels need to occupy the same space in the resized brush DP looks at their combined RGB values and takes the average.

It then looks at the palette and finds the closest colour to this, and uses it in their place. If you then change that colour yourself, wrongly assuming that it's not been used, the careful blending produced by the smoothing is ruined. Also it's slow, and doesn't allow you to change the shape of the brush – In other words, it's width to height ratio must remain equal.

Another well-used function is rotating a brush. However, like resize, it suffers from terminal grittiness – try rotating a stripey brush through 27 degrees!

However, there is an alternative – employing perspective. Use exactly the same method as for resizing, but instead of using moving the brush along the z-plane, try rotating around it. The antialias will tidy up the final brush, but it still suffers from the same problems as resizing.

## GRAPHICS

### Once again all things arty are under the eye of Dave Mee, self-styled linguistics critic and logo vandal

In the same menu, the shear function seems rather limited – after all, it only works in one direction and doesn't seem to produce anything interesting. Its real power lies in using it to create brushes for editing, as opposed to creating pictures directly.

It's a tool to make other tools really, so don't worry about not using it – it will be explained fully 31 days from now (assuming you buy next month's issue).

The last function, bend, is my favourite. It is used (surprisingly enough) to bend a brush. It is not a true bend, as the ends of the brush remain parallel to each other, instead of being perpendicular to the sides.

Nevertheless, it's good fun. Let's make the *Amiga Computing* logo a little more interesting with it (Oi! Leave that alone you vandal!).

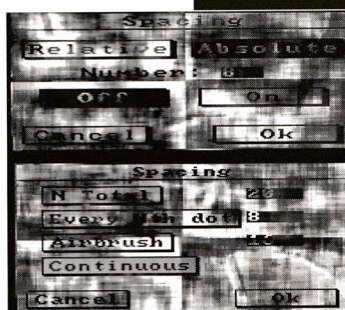
First paste the logo down. Then cut a small vertical strip from it, choose bend vertical, and "push" the centre of the brush upwards.

Paste it down somewhere, and then do the same again with the next strip along, but bending it downwards. Do this until the whole brush has been copied (second illustration in Figure II).

For a really weird touch do the same thing again, but cut and bend horizontal strips, alternating left and right. The result is a markedly more interesting brush (third illustration).

You may need to tidy it up a little before final presentation, but with the addition of a small background (fourth illustration) you can very easily produce a rather impressive logo in a matter of minutes.

**Figure I:  
Twisting  
time again**

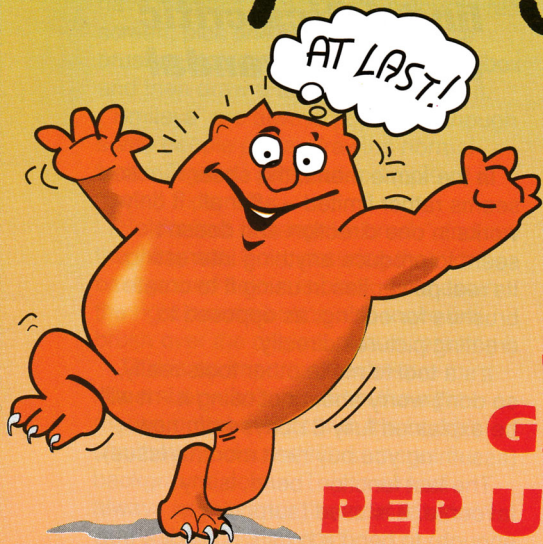


**Deluxe Paint II (top)  
Deluxe Paint III (bottom)**

**NEXT MONTH: More brushing up, and how to use resize and rotate and get away with it PLUS Dave Mee threatens to use a box! Be there or be a rotated/resized polygon.**



# ANNOUNCING something completely different YOUNG users of the



**BATTLE WITH BASIC!  
LEARN ABOUT LOGO!  
SUCCEED WITH SCIENCE!  
GET AHEAD WITH GAMES!  
PEP UP YOUR PROGRAMMING!  
PLUS PUZZLES AND PRIZES GALORE!**

*Let's Compute!* brings an exciting new dimension to computing. You'll find it full of fun things to try out on your micro. It will help you get to grips with Basic and explore the mysteries of Logo. You'll discover fascinating ways of linking your micro to the outside world. And we'll show you, with clever cartoons, just how a computer works. Plus lots of surprises! Never before has there been a computer magazine like *Let's Compute!* You'll find its action-packed pages crammed with enough hints, tips and ideas to keep you and your micro occupied for a whole month!

**YES  
PLEASE!**

Tick as  
required

☐ 3101

Send me the next 12 issues of *Let's Compute* for the special introductory price of £12 (including postage and packing).

☐ 3102

I'd also like to become a founder member of the *Let's Compute!* Club for the special price of £3 (instead of the regular £5) – so please send me the bumper Club pack with my first issue.

☐ 3103

I'll order *Let's Compute!* from my newsagent, but I'd still like to join the Club and receive my bumper member's pack for £5.

I wish to pay by:

- ☐ Cheque payable to Database Publications  
☐ Credit card No:

Exp. date

\_\_\_\_/\_\_\_\_/\_\_\_\_

Name .....

Signed .....

Address .....

Post code ..... Age .....

Daytime phone number in case of queries .....  
**TO: Database Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB**  
No stamp need if posted in UK

**PHONE ORDERS: 051-357 1275**

**Please send  
my software  
in this format**

☐ 3050

Compact/Archi/Elk (3.5" disc)

☐ 3051

BBC/Elk (5.25" 40 T)

☐ 3052

BBC/Elk (5.25" 80 T)

☐ 3053

BBC/Elk (tape)

☐ 3055

Amiga (disc)

☐ 3056

CPC (disc)

☐ 3057

CPC (tape)

☐ Spectrum (tape)

☐ Spectrum (disc)

☐ C64/128 (disc)

☐ C64/128 (tape)

☐ Atari ST (disc)

☐ PC (5.25")

☐ PC (3.5")





**IT'S HERE!**  
**THE FUN WAY TO**  
**LEARN COMPUTING**

**DON'T MISS IT!**

**QUACK!**

EVERY MONTH  
FROM  
JULY 16

**TURBO**

UTTERLY BRILLIANT  
THE WAY TO EXPLORE **YOUR** COMPUTER

**Here's a bumper pack of goodies for everyone!**

**It costs only £5 to join, but if you subscribe to *Let's Compute!* on the form alongside you can also become a founder member, with all the same privileges, for just £3!**

# LET'S COMPUTE! CLUB

COMPUTER

Become  
a founder  
member  
NOW!



**W**OTCHA, it's me again, here to update you on the wonderful world of AMOS. Since our last meeting so much has happened it's hard to know where to start.

Probably the most important thing is that a new version of AMOS is now available, so get a copy from the AMOS PD library (phone Sandra Sharkey on 0942 495 261 for more details. The improved V1.2 has a vast number of bug fixes, including those listed below.

### Amos V1.2 Bug Fixes

LDIR	Now works properly
Y HARD	Returns the correct value
SCIN	Does not return hidden screens
VAL	Works with negative floating point numbers
PLOT	Works with large floating point expressions
INT	Is now corrected
I SPRITE I BOB	Both are now tokenised (computer error for recognised)
AMAL OR UNPACK	Corrected Works properly now with portions of screens

AMOS V1.2 also includes a new file selector and a number of new commands, most important being the new BOB and SPRITE flipping routines. These commands allow you to reverse the image of a bob both horizontally and vertically and are completely compatible with AMAL.

Available in your shops now are some of the first products written with AMOS, all of which are published by Database Software. The software is Fun School 3 and consists of three separate packages aimed at the under 5s, 5 to 7s and over 7s. Each package uses very high quality graphics (better than a lot of games) and adheres closely to the much publicised national curriculum. I strongly recommend you go out and buy all three, not only because they are excellent products, but because I wrote them! I might as well get my plug in now 'cos I didn't get a mention in the first draft of the manuals.

Lastly in this little news file is some

information for comms users. Amiga Connection BBS and Big Bang Burger Bar BBS run a joint AMOS section containing quite a few programs to download. It also gives you access to other AMOS users and because they are both just a local phone call away from me, I can be found routing around on both at weekends. The two Sysops are big AMOS fans and use it regularly, so Hi to Paul Roffey and Paul Robert. I'll upload some more stuff when I get back from my holiday.

OK, lets do some work. AMAL – the AMos Animation Language – is the most advanced feature of AMOS. With it you can move or animate SPRITES, BOBs, Rainbows and even whole screens.

Its use is not limited to games, you could do shop demos, fun demos or produce animated titles for your videos.

We will start by loading a sprite file to play with, so press Escape to go to direct mode, insert your AMOS Data Disk – the one with all of the games on it – and type this

```
LOAD "AMOS_DATA:MAGIC_FOREST/MFSPRITES.ABK"
```

This will load the sprites from Magic Forest into bank number one. You may wonder why we are doing this in direct mode. It's mainly because we need to be able to see immediate results and it is not too important to save the files on to disk.

Now we need to set up a nice clean screen display :

```
FLASH OFF : CLS 0 : GET SPRITE PALETTE :  
DOUBLE BUFFER
```

Right now to display a bob and set up its AMAL channel

```
BOB 1,50,50,1 : CHANNEL 1 TO BOB 1
```

We have our little geezer displayed on the screen, but we want to move him. The first thing to remember when dealing with AMOS is that unless you are converting a ST program never use the STOS compatible MOVE X or

MOVE Y commands. They are nowhere near as flexible as AMAL and you will quite often end up with some very tacky movement.

To move this funny little creature we have to define an AMAL program. AMAL is quite simple to use, a lot of people have told me they found the manual explanation quite daunting, so I won't rush and we'll go through each command step by step.

```
NORMAL AMAL JOYSTICK CONTROL  
By P.J.Hickman  
Curs Off : Flash Off : Hide : Cls 0  
Double Buffer  
Get Sprite Palette  
Define Rainbows  
Set Rainbow 1,0,32,"(1,2,15)(1,2,15)" "" ""  
Set Rainbow 2,0,32,"(1,2,15)(1,2,15)" "" ""  
Rainbow 1,0,49,32  
Rainbow 2,0,228,32  
Define AMAL Movement string  
A5="Begin: Move 0,170,50 : Move 0,-170,50 : Jump Begin"  
B6="Begin: Move 0,-170,50 : Move 0,170,50 : Jump Begin"
```

The first thing to remember is that AMAL is a case dependant sub-language – more computerese for saying that it can tell if you have typed in capitals or lowercase letters. Any commands that we enter into our AMAL string will have at least one letter in upper case and the rest in lowercase.

Of course this isn't quite true for all AMAL commands, because a very few require two uppercase letters, but we won't worry about those for the time being.

To move an object we have to use a command called Move (surprised huh?), which uses three parameters. The first is the number of pixels the object should move in the X direction, that is across the screen. The second is the number of pixels we wish to move up (or down) the screen, remembering that both these parameters can be positive or negative numbers for backwards or forwards movement.

The very last parameter controls the amount of steps that AMAL will take to move your object in the X or Y direc-



**AMOS 3D – coming to an Amiga near you**



## AMOS Simple sprite plotter instructions

THIS program is a simple utility that allows you to take AMOS sprites and paste them onto an IFF screen ready for loading into Deluxe Paint, or porting over to another computer (such as the Atari ST). The program also draws a border around the sprite. The controls are pretty simple – once you have loaded a sprite bank that is!

KEY	USE
+	Moves to next sprite in bank.
-	Moves back one sprite.
A	Changes the sprite border colour register (adds one).
Z	Changes the sprite border colour register (decs one).
L	Loads a new sprite bank (but does not clear the screen).
S	Saves the picture in IFF format.
C	Clears the screen.
U	A simple undo feature. Be careful, once pressed there is no way of going back.
Q	Quits back to AMOS.

If you press left and right mouse button (in that order) the current bob will be pasted onto the screen.

tions.

I know it sounds a little complex but it really is flexible. Let's try an example – remember to type this EXACTLY as shown here:

```
AMAL 1,"Move 16,0,1" : AMAL ON 1
```

You will see that the geezer we set up earlier has moved smoothly from his origin (50,50) across 16 pixels in one pixel increments. Try this one:

```
AMAL 1,"Move 16,0,4" : AMAL ON 1
```

It moved a little faster this time because we changed the last parameter in the Move command. It is a little like saying "Move the object 16 pixels, but I want it done in four separate goes."

OK, last example for this bit :

```
AMAL 1,"Move 16,0,16" : AMAL ON 1
```

If you have managed to follow what I have been saying you will realise that our little geezer has just moved 16 pixels in increments of 16 pixels.

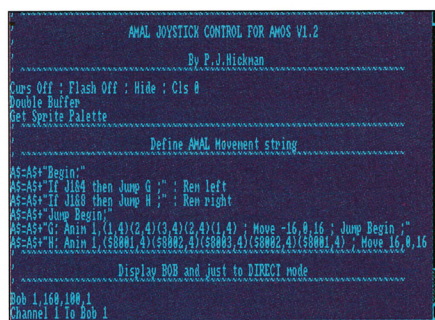
I hope you have now mastered the simple techniques required to produce fun moving characters. Remember that, as my mate Aaron Fothergill (editor of the AMOS club magazine), always says: "No program is fixed, you should

always get lots of people to try it out and tweak it accordingly."

Now we are running out of room for this issue, so let's cover a little animation. The animation command in AMAL has a very simple structure. Type this in direct mode:

```
AMAL 1,"Anim 0,(1,4)(2,4)(3,4)(2,4)(1,4)"
AMAL ON 1
```

Our little geezer should be waving his dinky legs like there is no tomorrow. As you can see, we first put an Anim command in the string (with its first letter in capitals) followed immediately by the amount of times you wish to repeat the animation. If you put a zero the animation will repeat indefinitely.



The next parameters are the actual animation numbers, these are stored in brackets and consist of the image number of the frame stored in the SPRITE/BOB bank followed by a comma and then the time you wish to elaps before the next animation frame is displayed.

Well, I hope that hasn't put you off AMAL 'cos next time we are going to tackle joystick-controlled animation. The programs on the Cover Disk this month are slightly more advanced versions of the routines we have been looking at here, containing a mixture of animation and movement commands.

Also on there is the moving rainbow for our game background (all done using AMAL). I didn't quite have room to fit it into this month's column so it will have to wait.

As if that wasn't enough for people who have got the V1.2 upgrade, there is a little program on the cover disk which will show you how to save memory by using the new SPRITE flipping routines.

See if you can produce some good little demo between now and the next issue, if you do why not put then into the public domain so that all AMOS users can see them?

Before I go, if anybody from the RSPCA is reading this column I would just like to report Richard Vanner of Database Software for not feeding his cat until he got home at 2 o'clock on Tuesday September 11th.


This was due to a few last minute bugs (now corrected) in the Over 7s part of Fun School 3!



**Peter Hickman  
irons out a  
few bugs and  
takes a look  
at the unique  
animation  
language  
which makes  
AMOS so  
special**

Next month we will cover some of the intermediate level features of AMAL, including joystick control and synchronised movement and animation.





## Now you can own the toughest set of pens in the world – for much less than half price!

(Or buy two – and get them both for  
almost a quarter of the normal price)

The three pens that make up the Pentech 200  
set can stand up to the roughest treatment you  
can inflict on them – and still give you best  
possible writing quality. Drop one off your desk –  
nib first. Or dunk it in a pint of beer. Or just tread  
on it. Whatever you do, it will come up smiling!

*We have made a special purchase of a limited number of  
Pentech sets and can now offer you this unique, high-quality  
writing technology at a price never before possible.*

The normal retail price is £37.85. But with this special  
offer you can buy one set for just £14.95. Buy a second  
as a present and we'll send you the two sets for £20!

*You can buy with confidence. Each  
set comes with a lifetime guarantee.*

**The three pull-top  
pens in their  
presentation  
case consist of**

One cartridge pen

One ballpoint pen

One fine liner

**Choose from  
smart matt black  
or satin chrome  
metal finish**



# A VIDI SPECIAL OFFER

**SAVE  
£15**

**READER OFFERS**

Thanks to a breakthrough by Rombo  
Productions in frame-grabbing technology,  
you can now produce good colour images  
quickly and cheaply with Vidi-Amiga and the  
VidiChrome colour software.

- Take snapshots in 16 shades live from video
- Multiple frame store
- Dynamic cut and paste
- Full palette control
- Hardware and software control of brightness and contrast
- Compatible with all video standards

"Vidi must be one of the most exciting peripherals you  
can buy for your Amiga" – Amiga Computing, March 1990

**FULL PAL  
SCREENS**

RRP £134.95\*  
**OUR PRICE**  
**£119.95**

\* Includes colour  
upgrade worth  
£19.95



See order form on page 139



# SAVE

# £30

Buy the combined package of the HiSoft Basic Compiler and HiSoft's award-winning Extend library for less than the price of the compiler alone

**HiSoft Basic is THE language to get you started with programming the Amiga.**

- ★ Runs up to 30 times faster than AmigaBASIC
- ★ Produces stand alone programs
- ★ Compatible with PC Quick Basic & AmigaBASIC

**HiSoft Basic is easy to use**

- ★ Supplied with a high quality manual
- ★ No upper limit to program or data size
- ★ Multi-tasking editor and compiler

**HiSoft extend is the natural enhancement for HiSoft Basic users**

- ★ 50 functions and subprograms
- ★ Load and Save IFF pictures
- ★ Use all the commands in your own programs

Together both programs would usually set you back almost £100, as a special offer to Amiga Computing readers both programs are available for just £69.95.

## AMIGADOS: A Dabhand Guide

Is a comprehensive guide to the Commodore Amiga's disc Operating System (Versions 1.2 and 1.3). It provides a unique perspective on this powerful system in a way which will be welcomed by the beginner and the experienced user alike.

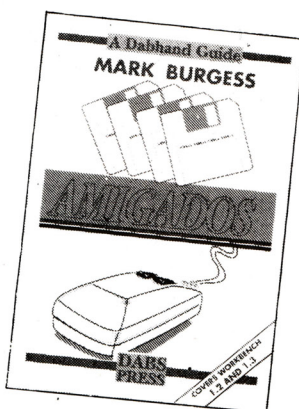
Rather than simply reiterating the Amiga manual, this book takes a genuinely different approach to understanding and using the Amiga and contains a wealth of practical hands-on advice and hints and tips.

The many features of this book include:

- Full coverage of Amiga DOS 1.3 functions
- Filing with and without the Workbench
- The Amiga's hierarchical filing system
- Pathnames and Device names
- The Amiga's multitasking capabilities
- The AmigaDOS screen editor
- AmigaDOS commands
- Batch processing
- Amiga Error code descriptions
- How to create new systems discs
- Use of the RAM discs
- Using AmigaDOS with C

Amiga Computing approved reading

# £14.95



### Keyboard dust cover (A500)

# £4.95

Protect your Amiga with this top-quality cover made from clear, water-resistant vinyl. It's bound with strong cotton and features the Amiga Computing logo.



### Binder

# £5.95

Twelve rods hold your issues in place and keep them in pristine condition in this smart PVC binder.



### Mouse mat

# £6.95

The perfect desktop environment for your mouse with its specially-designed, perfect-grip surface. It ensures much smoother movement, gives super-positive control and protects your table top from scratches.



### Disc storage box

# £4.95

This luxury padded box is the ideal storage medium, holding up to FIFTY 3.5" discs

# SAVE on batteries

## For your personal stereo, radio or TV

You know how expensive it is to replace your batteries when they run down.

Even with rechargeable batteries you still have to wait 14 hours for full charge. We have solved the problem with the unique superfast powerful battery and charger kit.

This amazing device will completely charge four standard AA size rechargeable batteries in under 2 hours and each battery can be recharged at least 1,000 times.

Further, for a limited period we can sell the charger and four rechargeable batteries at the staggeringly low cost of £19.95 (plus £1 p&p).

**IT WILL PAY FOR ITSELF WITHIN WEEKS!**

# SAVE £25

# DG CALC

Sells for £39.95 ... but yours only £14.95

DG Calc is one of the most powerful and easy to use spreadsheets in its price bracket. It offers all the features you could think of, and many more besides.

Specially written to make the best use of the Amiga's features, DG Calc is an invaluable addition to your business utilities.

### Some of DG Calc's numerous features:

- |                                 |                              |
|---------------------------------|------------------------------|
| ● 512 rows by 52 columns        | ● GOTO feature               |
| ● Menu or command driven        | ● Password protection        |
| ● Adjustable column widths      | ● Cell justification         |
| ● Text overflow                 | ● Powerful line editor       |
| ● Instant recalculation         | ● UNDO feature               |
| ● Integrates with other program | ● Beginner's tutorial        |
| ● Window feature                | ● Supports keyboard or mouse |
| ● User definable formulas       | ● UK only                    |



# Ear shattering offers for Amiga Computing readers

Make the most of your Amiga's superb sound capabilities by connecting Soundblaster's high quality stereo amplifier and speakers.

Using the latest microchip technology, the specially designed amplifier can deliver an ear-shattering five watts of music power, with twin controls provide complete control over volume and balance.

The fifty watt speakers consist of a woofer, a mid-range and a tweeter for the highest possible sound quality. Thumping bass, crisp trebles: You'll hear them all with incredible clarity.

The Amiga Soundblaster comes complete with mains adaptor and full instructions. No alterations to your computer are required – just plug in and switch on to re-discover sound on your Amiga.

## SOUNDBLASTER

**Boost your computer's sound with an AMIGA SOUNDBLASTER**



RRP £59.95

**ONLY  
£44.95**

**Buy all 3  
SAVE  
£20.90**

## QUARTET



**Make beautiful music on your Amiga**

Quartet is a stunning sequencing package that will allow you to compose anything from a jingle to a symphony.

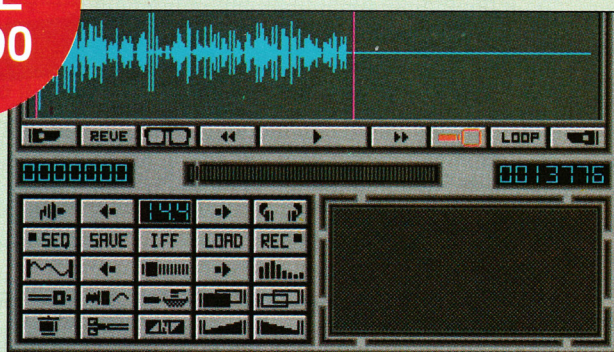
Making full use of the Amiga's unique four channel stereo sound system, Quartet is equally at home playing Depeche Mode or Debussy. Quartet comes complete with complete instructions, a disk of full of sound samples and full source code to allow you to intergrate your tunes into your own programs.

What's more, Quartet is MIDI compatible, so you can connect a suitable keyboard or synthesiser to enter notes directly.

**It's the ideal sequencer package to complement the excellent Master Sound sampler**

– Amiga Computing, August 1990

**Quartet comes with full instructions and two disks for £39.95**



## Master Sound

*Capture any sound you hear and replay it in seconds*

It's so easy to use: Simply connect the sampler to your Amiga, load the software and immediately you have the ability to capture sounds with amazing accuracy.

Connect your compact disc player or personal stereo and digitise sounds to incorporate into your own games and tunes.

The supplied software provides complete control over the sampled sounds: Cut and paste them, flip and fade them and you're still only using a tiny fraction of the sound processing tools available.

Best of all, the comprehensive instructions will soon have you creating your own public domain demo disks complete with IFF picture files.

The perfect sound sampling package for beginners and experts alike.

Master Sound is a complete hardware and software sampling system for only **34.95**

**"Is it real or is it Master Sound?"**

– Amiga Computing, May 1990

**See order form on page 139**



Offers subject  
to availability



# READER OFFERS

Valid to 30.11.90

## Back Issues

May 1990	£3.10	9723	<input type="checkbox"/>
June 1990	£3.10	9724	<input type="checkbox"/>
July 1990	£3.10	9725	<input type="checkbox"/>
Aug 1990	£3.10	9726	<input type="checkbox"/>
Sept 1990	£3.10	9727	<input type="checkbox"/>
Oct 1990	£3.10	9728	<input type="checkbox"/>

All these back issues include cover disk.

## Bargain bundle

Six issues of Amiga Computing (May-Oct)	£17.00	9929	<input type="checkbox"/>
†Add £3 Europe & Eire/£12 Overseas			<input type="checkbox"/>

## Rombo Vidi-Chrome

<b>NEW</b>	<input type="checkbox"/>	
£119.95	9891	<input type="checkbox"/>

## Protext Version 4

£79.95	9530	<input type="checkbox"/>
--------	------	--------------------------

## Hi Soft Basic

Basic Compiler	£69.95	9896	<input type="checkbox"/>
----------------	--------	------	--------------------------

## Battery charger

£19.95	9861	<input type="checkbox"/>
Plus post and packing £1.50		<input checked="" type="checkbox"/>

## Amiga Music

Soundblaster	£44.95	9912	<input type="checkbox"/>
Quartet	£39.95	9913	<input type="checkbox"/>
Master Sound	£34.95	9914	<input type="checkbox"/>
Package of all three	£99.95	9915	<input type="checkbox"/>
(See page 110)			

(See page 110)

## Amiga DABhand Guide

A comprehensive guide to the Amiga's disc operating system (version 1.2 and 1.3)	£14.95	9866	<input type="checkbox"/>
--	--------	------	--------------------------

## Mail Order offers

Publishers Choice	£79.99	9867	<input type="checkbox"/>
Mini-Gen	£98.85	9869	<input type="checkbox"/>
Word Perfect 4.1 version	£178.85	9870	<input type="checkbox"/>
X-Cad	£89.85	9871	<input type="checkbox"/>
Small Business Accs Xtra	£89.85	9873	<input type="checkbox"/>
Mavis Beacon Typing	£24.99	9874	<input type="checkbox"/>
Home Accounts/Day by Day	£34.90	9851	<input type="checkbox"/>
ArgAsm	£54.95	9858	<input type="checkbox"/>
Flight Simulator	£35.95	9868	<input type="checkbox"/>
Pair of Scenery Discs	£31.90	9872	<input type="checkbox"/>
Flight Simulator+Scenery Disc	£65.85	9878	<input type="checkbox"/>

## Summer Games Clearance

£19.95	9911	<input type="checkbox"/>
--------	------	--------------------------

## Pen Tech 2000

(see pages 106)

Matt Black	£14.95	9918	<input type="checkbox"/>
Silver	£14.95	9919	<input type="checkbox"/>
Silver + Black	£20.00	9920	<input type="checkbox"/>

## DG Calc

£14.95	9875	<input type="checkbox"/>
--------	------	--------------------------

## Batman – The Movie Game

£14.95	9882	<input type="checkbox"/>
--------	------	--------------------------

## Dust covers

£4.95	9507	<input type="checkbox"/>
-------	------	--------------------------

## Mouse mats

£4.95	9508	<input type="checkbox"/>
-------	------	--------------------------

## Binders

£5.95	9509	<input type="checkbox"/>
-------	------	--------------------------

## Disc boxes

£4.95	9860	<input type="checkbox"/>
-------	------	--------------------------

Addition for postage: Europe & Eire add £3	<input type="checkbox"/>
Overseas add £5	<input type="checkbox"/>
Unless otherwise indicated	



**TOTAL**

**Send to: Database Direct, FREEPOST,  
Ellesmere Port, South Wirral L65 3EB**

(No stamp needed if posted in UK)

Products are normally despatched within 48 hours of receipt  
but delivery of certain items could take up to 28 days

**ORDER at any  
time of the  
day or night**

By phone: **051-357 1275**

By Fax: **051-357 2813**

By MicroLink: **MAG001**

Don't forget to give your name,  
address and credit card number

General Enquiries: **051-357 2961**

Payment: Please indicate method (✓)

☐ Cheque/Eurocheque made payable to **Database Direct**

☐ Access/Mastercard/Eurocard/Barclaycard/Visa/Connect

No.

Name ..... Signed.....

Address .....

..... Post Code .....

Daytime telephone number in case of queries.....



Expiry Date:

AMC11



# COMPUTERLAB

85A MANSFIELD ROAD, DAYBROOK, NOTTINGHAM, NG5 6BH

TELEPHONE NOTTM. (0602) 673674 / 673672

## HARDWARE AND SOFTWARE

### AMIGA PACKS

INC. MODULATOR/WORKBENCH  
THE VERY FIRST/ EXTRAS/BASIC.

BATMAN PACK .....£359.00  
FLIGHT OF FANTASY PACK .....£359.00  
SCREEN GEMS PACK .....£359.00  
CLASS OF THE 90's PACK .....£499.00

AMIGA 2000 Please ring for best prices  
AMIGA 3000 Please ring for best prices

### ATARI PACKS

DISCOVERY PACK 520 STEM .....£269.00  
POWER PACK 520 STE .....£359.00  
1040 PACKS FROM .....£434.00  
LYNX .....£159.00

### SEGA MEGADRIVE

MEGADRIVE .....£179.00  
SOFTWARE ALL AT DISCOUNTED  
PRICES. PLEASE RING FOR DETAILS.

### NEO GEO

PLEASE RING FOR BEST DISCOUNTS ON HARDWARE AND SOFTWARE -  
THE VERY BEST GAMES MACHINES IN THE WORLD TODAY!

### PRINTERS

STAR LC10 .....£156.00  
STAR LC10 COLOUR .....£197.50  
STAR LC24-10 .....£235.00  
COMMODORE MPS1230 .....£140.00

### MONITORS

ATARI SM124 HIGH RES MONO .....£140.00  
PHILLIPS 8833 STEREO MONITOR .....£255.00

### SOFTWARE

WE CARRY AN EXTENSIVE RANGE OF  
SOFTWARE FOR ALL MACHINES ALL  
AT DISCOUNTED PRICES - AT LEAST  
25% OFF R.R.P. FOR EXAMPLE:

	R.R.P.	OUR PRICE
WINGS.....	£29.99	£22.00
AMOS.....	£49.99	£36.50
BEAST 2.....	£34.99	£26.00
AWESOME.....	£34.99	£26.00
BATTLEMASTER.....	£24.99	£18.50

## PUBLIC DOMAIN DISKS

We have an extensive range of public domain  
and Shareware programs. Please ring for  
details of our Amiga and ST libraries.

### SEVEN DISK SPECIALS ONLY £10.95

**AMIGA DEMOS PACK 4** - All of the best  
latest demos. Pack changes all the time but  
never has same demos twice.

**AMIGA BUSINESS PACK** - Spreadsheet,  
Wordprocessor, Database, Journal, N.A.G.,  
Inventory.

**AMIGA UTILITY PACK 2** - Virus killers,  
Copiers, Disk Managers, Rippers, Boot copier  
*PLUS Loads more!*

**AMIGA PROGRAMMERS PACK** - C  
Compilers, Assemblers, Source Codes, Pascal,  
LISP, C Manual etc.

**ST GAMES PACK** - Azapian, Othello,  
Queboid, Breaknoid, Wheel, Football, Monopoly,  
Rcm, Invaders, Tennis, Bermuda Race 2.

**ST BUSINESS PACK** - Spreadsheet,  
Database, Inventory, Fincalc, Stocks, Shares,  
Double Sentry, ST Writer Elite 3.0.

## PERIPHERALS

AMIGA HALF MEG UPGRADES .....£35.00  
ST SECOND DRIVE .....£79.99  
AMIGA SECOND DRIVE .....£69.99  
NAKSHA MOUSE .....£33.50  
LINNET MODEM .....£145.00  
LINNET 1200 MODEM .....£212.00  
A590 20Mb HARD DRIVE .....£365.00  
VORTEX 40Mb HARD DRIVE .....£499.00  
HARDWARE VIRUS PROTECTION .....£14.95

## BLANK DISKS

3.5" QUALITY DISKS £12.00 FOR 30\*

\*FULLY GUARANTEED DSDD 100% CERTIFIED

## ORDER BY PHONE

(0602) 673674 / 673672

**DELIVERY** - Please add £6.50  
courier delivery for orders over £100  
Add £2 p.&p. for orders under £100

ALL PRICES INCLUDE V.A.T.

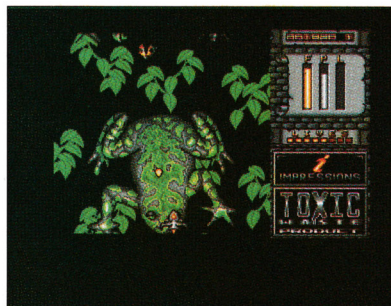


# SUMMER GAMES CLEARANCE

## DISK BARGAINS!

SAVE £64.90  
Buy All 3 for  
£19.95

Send for the full version of the great programs  
on the Amiga Computing cover disk - and SAVE £64.90!



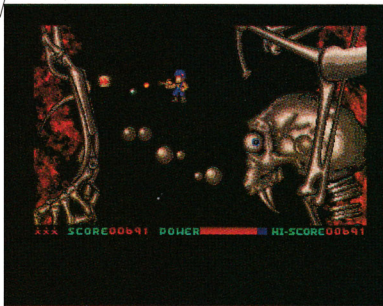
### CHARIOTS OF WRATH

Chariots of Wrath combines the best features of some of the greatest games ever written, resulting in an action-packed mega adventure.

Each phase of the game features impressively designed graphics, superb sound effects and highly addictive game play.

As you traverse through the levels, amassing firepower and points, you'll find you just have to keep coming back to complete that next level.

RRP £24.95



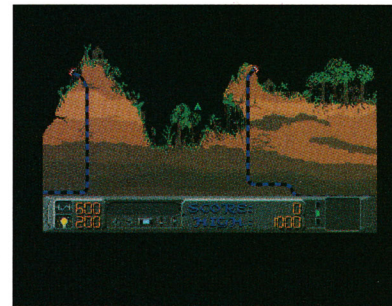
### TRAINED ASSASSIN

This blockbuster combines the best features of some of the most popular games ever to have appeared on the Amiga.

It features five action-packed levels with different varieties of scrolling and gameplay, with the fifth level guaranteed to raise your joystick's temperature by a few degrees (if not your own).

"Trained Assassin is of a standard that could probably survive unaltered in a real arcade - few games could manage that". - Stewart Russel, Amiga Computing.

RRP £24.95



### RAIDER

Skill and determination are the qualities you'll need in vast amounts if you're going to fully master this game.

Your mission consists of collecting pods by hovering above them and switching on your tractor beam, but all the time you have to take into account the effects of inertia and gravity, controlling your ship as smoothly as possible - to avoid colliding with the planet below.

"The graphics are wonderfully drawn and smoothly scrolled in all directions. Every landscape is a joy to look at and explore...delicate, addictive gameplay". - John Kennedy, Amiga Computing.

RRP £24.95



# You've never seen a disk like this!

- ★ It adds, subtracts, multiplies and divides
- ★ It works out VAT and other percentages
- ★ It has a powerful three-key memory
- ★ And it's solar powered!

(But just don't put it in your computer!)

... and it's  
**FREE\***  
when you  
subscribe  
to...

**AMIGA**  
COMPUTING

\* UK Only



## ORDER FORM

Valid to  
Nov. 30, 1990

Please tick the  
appropriate Box

### 12 Months Subscription – UK (including free calculator disc)

		New	Renewal
With cover disc	£29.95	<input type="checkbox"/> 9582	<input type="checkbox"/> 9584
Without cover disc	£24.95	<input type="checkbox"/> 9583	<input type="checkbox"/> 9585

### 12 Months Subscription – outside UK

		New	Renewal
Europe/Eire (with cover disc)	£34.95	<input type="checkbox"/> 9543	<input type="checkbox"/> 9544
Rest of World – Airmail (with cover disc)	£49.95	<input type="checkbox"/> 9545	<input type="checkbox"/> 9546

Subscription orders received before October 12 will commence with November issue

Payment: please indicate method (✓)

☐

Cheque/Eurocheque made payable to Interactive Publications Ltd

☐

Access/Mastercard/Eurocard/Barclaycard/Visa/Connect

Expiry  
Date



Name \_\_\_\_\_ Signed \_\_\_\_\_

Address \_\_\_\_\_

Post Code \_\_\_\_\_

Daytime telephone number in case of queries \_\_\_\_\_

Send to: Database Direct, FREEPOST, Ellesmere Port,  
South Wirral L65 3EB (No stamp needed if posted in UK)

Order at any  
time of the  
day or night

By phone: 051-357 1275

By fax: 051-357 2813

By MicroLink: MAG001

Don't forget to give your name,  
address and credit card number

General Enquiries: 051-357 2961

If you prefer to have the  
magazine delivered with  
your morning paper, cut  
out this form and give it  
to your newsagent

Dear Newsagent

Please reserve

**AMIGA**  
COMPUTING

every month

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



NOT JUST POOLS AND HORSES

# THE DOGS

From the Company that brought you the World Famous TIPSTER HORSE RACING program and the PUNTER POOLS program, comes THE DOGS. This program is for AMIGA and ATARI ST owners and lets your computer rate GREYHOUNDS over all distances and types of race. This program can be used with data from the RACING POST, overseas versions are available.

The program allows you to quickly enter data, no detailed knowledge of Dogs, or Computers is necessary. The program is designed for both Novice and Professional to get the most from the software.

The program uses the MOUSE for fast data entry and SOUND to warn you of mistakes.

If you enjoy a flutter, we have the software for you.



£29.95



**TAM Marketing**  
7 GD Units, Cofton Rd  
Marsh Barton Trading Estate  
EXETER DEVON EX2 9QW  
(0392) 215485 or 427186

PLEASE QUOTE:

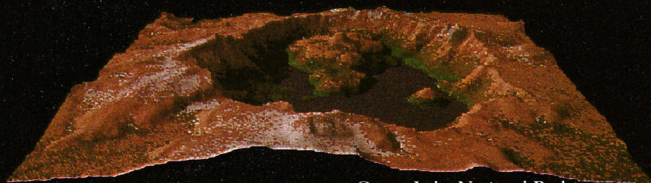
**AMIGA  
COMPUTING**

## Explore Virtual Reality!



Step into the picture with Vista's camera.  
What you set is what you get.

**VISTA**



Crater Lake National Park

- ➔ Yosemite
- ➔ Crater Lake
- ➔ Mt. St. Helens
- ➔ Mons Olympus (Mars)
- ➔ 4 Billion Imaginary Fractal Landscapes
- ➔ Creates Frames for Animation
- ➔ Intuitive Interface
- ➔ Landscape Featuring Control

1 meg required • 2.0 compatible • List price \$ 99.95

*Virtual Reality Laboratories, Inc.*

2341 Ganador Court, San Luis Obispo, CA 93401 805/545-8515

**Reality prime will never look the same again!**

For further details,  
Contact H. B. Marketing Ltd  
on 0753 686000

**commodore**

**A3000 IN STOCK!**  
**AMIGA**

Prices include VAT, delivery & warranty.  
Please add £15 for overnight delivery.  
All systems are tested before despatch.  
On-site maintenance options available.

- Amiga A3000 25MHz 100MB £3145
- Amiga A3000 25MHz 40MB £2895
- Amiga A3000 16MHz 40MB £2595
- Amiga B2000 latest UK model, with 1.3 Roms and 1MB chip-RAM £845
- Amiga B2000 with A2091 40MB Quantum 11ms autoboot hard disk £1245
- Amiga B2000 with A2286 PC-AT bridge board & 5¼" disk drive £1345

■■■ WE SHIP EVERY A3000 WITH 2MB CHIP RAM AS STANDARD

**PERIPHERALS**  
**AMIGA**

- A2620 68020 Card + 2MB 32-bit £995
- A2630 25MHz + 4MB 32-bit £1395
- A2286 PC-AT board & 5¼" drive £625
- A2088 PC-XT board & 5¼" drive £349
- C2058 8MB Board, 2MB installed £259
- RAM for above, per 2MB ... £144
- RAM for A3000, all types ... Phone
- A2091 fast SCSI hardcard £225
- A2091 + 40MB 11ms Quantum £495
- A2091 + 105MB 11ms Quantum £845
- RAM for A2091, per MB ... £56
- Quantum ProDrive 40MB 11ms £349
- Quantum ProDrive 105MB 11ms £695
- Amiga A500 v1.3 complete... £349
- KCS PC Power Board £320
- C501 plug-in 512K RAM/Clock £49
- A501 plug-in RAM/clock 512K £59
- C1010 NEC 3½" slimline drive £79
- Amdrive 50MB autoboot hd disk £495
- A590 20MB autoboot hard disk £375
- RAM for A590, per MB ... £56
- Supra Modem 300-2400 baud £159
- Supra 2400z internal modem £159
- A10845 colour stereo monitor £259
- 14" Multisync high-res monitor £445
- Flicker Fixer Multiscan Adaptor £349
- Star LC10 Multifont Printer £179
- Star LC10C colour, 120 cps, NLO £229
- HP DeskJet 500 300 dpi inkjet £595
- HP PaintJet colour inkjet 180 dpi £925
- Trackball Marconi RB2 £59

■■■ B2000 + AT Bridge Board + 40MB autoboot hard disk £1795!

Why not enjoy the free Teletext databases with the MicroText Teletext adaptor... Fully programmable, with Fastext facility, instant access to last 16 pages, double page view, telesoftware loader, auto-start/background operation... Pages can spoken, printed as ASCII or graphics, saved as ASCII or IFF files... And it turns your 1081/1084/8833 monitor into a digital TV! Available now for only £139!

**TELETEXT**  
**AMIGA**

■■■ Amstrad FX9600AT Fax + Printer + Copier + Scanner £100 off!

**PRODUCTIVITY**  
**AMIGA**

- NEW! Lattice C v5.10 £159.95
- A/C Basic v1.3 109.95
- Amiga Logo 39.95
- C64 Emulator v2 39.95
- Workbench v1.3 Enhancer 12.95
- SuperBase Personal 29.95
- SuperBase Personal 2 Relational database power, without programming! 49.95
- " " Professional! v3 "The Rolls-Royce of Amiga databases" (NCE) 154.95
- SuperPlan Pro Spreadsheet with business graphics, time planner 49.95
- Personal Tax Planner UK Income Tax computation program, from Digita 29.95
- Doctor Aml Locates and maps out bad disk blocks/bad RAM! 39.95
- Excellence 2 New improved version of high performance WP 169.95
- Pagestream 2 With major new features incl. Agfa/Adobe fonts 149.95
- Professional Page v1.3 Includes WP, Desktop, colour separations, CAD 169.95
- CG Outline Fonts 35 Agfa CG fonts for ProPage, ProDraw 2, PageSetter 2109.95
- Gold Disk Type More Agfa CG fonts, choice of 4 sets of 3 fonts, per set 39.95
- Pagesetter 2 £59.95
- Pen Pal 79.95
- Publisher's Choice 64.95
- Works Platinum Edition 99.95
- VizaWrite Desktop v2 49.95
- System Programmer's Guide 32.95

■■■ PAGESTREAM 2 PRODRAW 2 EXCELLENCE 2... In stock now!

**CREATIVITY**  
**AMIGA**

- Digiview Gold V4.0 £99.95
- De Luxe Paint 3 62.95
- De Luxe Paint 2 29.95
- PageFlipper + F/X 49.95
- Fantavision 24.95
- Aegis Sonix v2.0 29.95
- AmigaVision Every Amiga should have one! Phone
- Professional Draw 2 Here at last... and worth waiting for 99.95
- Sculpt-Animate 4D 3D graphics and animation for the professional user 369.95
- Sculpt-Animate 4D Jr. As Sculpt 4D above, without HAM ray-tracing 109.95
- Sculpt 3D XL Much faster than Sculpt 3D, with 24-bit plane option 89.95
- Pro-Video PAL Plus Professional video titler with fonts, extra fonts available 169.95
- Pro Video font sets Choice of 5 sets of 4 anti-aliased fonts, per set... 89.95
- TV-Text Professional Latest full-feature video titler, includes Zuma fonts 99.95
- SummaSketch Plus 12x12 Graphics Tablet with stylus & 4-button cursor 475.00
- Rendale 8802 Genlock £199.95
- PAL Rendale Pro Genlock 645.00
- FrameGrabber 575.00
- ColourPic Digitiser 475.00
- Superpic Genlock/Digitiser 595.00
- De Luxe Print 19.95
- Digipaint 3 59.95
- De Luxe Video 3 89.95

■■■ IF YOU WANT IT TOMORROW... CALL US TODAY! ON 081-546-7256 ■■■

Prices are POST FREE & include VAT.  
Order by phone with your credit card, or send cheque/PO or your credit card number. Official orders welcome. We despatch same day by FIRST CLASS post. Please allow 5 days for delivery of hardware orders. Prices are quoted subject to availability.  
Ref. A74



**Calco  
Software**

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 081-546-7256



Reach the top  
with ...

**LCL**

Self-Tuition Courses

**NEW**

World leaders - Hons graduate/teacher authors - At all major  
shows - £5 off total for 2, £10 off for 3

**PRIMARY MATHS COURSE**

**NEW**

Complete course for ages 3-12 years with full screen colour  
graphics. 24 programs + 2 books. £24 (Amiga, ST, PC, CPC, BBC)

**MEGA MATHS**

**NEW**

A-level step-by-step course of 24 programs. Full screen graphics for  
calculus. £24 (Amiga, CPC, BBC)

**MICRO MATHS**

Complete course taking beginners to GCSE in 24 programs on 59  
topics + 2 books. £24 (Amiga, ST, PC, PCW, CPC, BBC)

**MICRO FRENCH**

Complete course taking beginners to GCSE, with real speech & graphics  
adventure game, 24 programs + 2 books. £24 (Amiga, BBC).

**MICRO ENGLISH**

Complete course taking age 8 years to GCSE English Language, with  
real speech. Also for EFL. It covers punctuation, spelling and much  
more. 24 programs and 2 books at £24 (Amiga, PCW, CPC, BBC).

Send coupon and cheques/PO's or phone orders or  
requests for free colour poster/catalogue to:

LCL (DEPT AMC) THAMES HOUSE, 73 BLANDY ROAD,  
HENLEY-ON-THAMES, OXON RG9 1QB

Phone now  
for immediate  
despatch

or ring 0491 579345 (24 hrs)

Name .....  
Address .....  
Title .....  
Computer .....



**Your computer is  
the only teacher  
which YOU CONTROL!**

**Whatever your age, whatever your subject  
- let your computer help you learn.**

Subjects include ...

**French, German, Spanish, Italian, English  
History, Geography, Science, General Knowledge,  
Football, First Aid, Sport, England, Scotland,  
Natural History, Junior Spelling and Arithmetic**

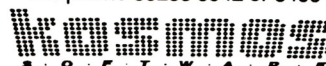
Available for most popular  
home & business computers



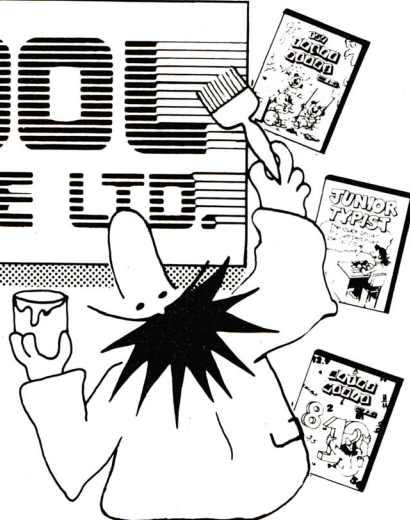
*Kosmos are specialist producers of Educational  
Software designed to help you enjoy learning from your  
computer. Our programs even allow you to add your  
own lesson material.*

**Write or telephone for a FREE 20-page BROCHURE  
of our Educational & Leisure software**  
Please state your computer type

Kosmos Software Ltd, FREEPOST (no stamp needed)  
DUNSTABLE, Beds. LU5 6BR  
Telephone 05255 3942 or 5406



**SCHOOL  
SOFTWARE LTD.**



**THE THREE BEARS (5 - 10)  
IBM, ST, CPC, AMIGA.**

Superbly reviewed educational  
adventure. Develops reading and  
imagination.

**MAGIC MATHS (4 - 8)**

**IBM, PCW, ST, AMIGA.** Highly rated  
primary maths programs. Selection of  
games. Add and Subtract.

**MATHS MANIA (8 - 12) IBM, PCW,  
ST, AMIGA.** "The best primary programs  
I have yet seen." Multiply, Divide, Maths  
Skills.

**BETTER SPELLING (8 - 18)**

**IBM, ST, PCW, AMIGA, CPC,  
BBC, CBM (D).** Highly acclaimed tutor.  
Received excellent reviews. Challenging.

**BETTER MATHS (12 - 16 GCSE)**

**IBM, PCW, ST, AMIGA, CPC,  
CBM (D).** Very comprehensive coverage  
of all the major aspects of maths for this  
age group. Excellent.

**JUNIOR TYPIST (4 - 10) IBM, ST,**

**AMIGA.** Keyboard trainer which helps  
spelling.

**THE BEST IN EDUCATION**

**HOW TO ORDER**

1. Post your order.
2. Fax your order.
3. Ring credit card number.
4. Ring for advice.
5. Ask your dealer to order.

Prices:

IBM 5 1/4 or 3 1/2, ST & STE, AMIGA £22.95

CPC, PCW, CBM (disks) £16.95

FREE CATALOGUE

**ORDER DIRECT TO:**

School Software Ltd., Tait Business Centre,  
Dominic Street, Limerick, Ireland.

Tel: (U.K.) 010 353-61-45399.

Fax Orders: 010 353-61-44315.

Credit Card Hotline (U.K.): 010 353-61-45399.

Others Tel: 010 353-61-45399.

Access/Mastercard/Eurocard/Barclaycard/Visa No.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Expiry Date \_\_\_\_\_ Cheque/PO ☐

My machine \_\_\_\_\_

Titles \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_



**MEL CROUCHER**  
-COMPUTER  
FUN LINE  
**0898 299399**

New event  
EVERY  
WEEK!

3 mins of mind blowing  
entertainment

**THE HOTTEST  
GAMES  
SECRETS**

**MEGATIP  
GAMESLINE**  
**0898 299388**

Proprietor: B. Everiss, PO, Box 71, Kington, Warwick, CV35 0XA.  
Calls charged at 25p per minute cheap rate and 38p per minute at all other times  
(Ask whoever pays phone bill)

**JTS PD**

**NOW ONLY £1.50 PER DISK!**

Here is a small sample of our software:

- Alcatraz Megademo 4: Superb effects and music in the best MegaDemo so far! (3)
- Fractal Flight Demo: Fly through Fractal scenery with this great disk. (1)
- Best Demos of 1990: Rebels COMA demo, Red Sector CeBit '90 and more. (1)
- Fraxion Horror Video: Your worst nightmares come true on your Amiga. (1)
- It's Obscene 5: Listen to these very abusive phone calls, have a chuckle! (2)
- Digital Concert 5: The newest and best digi-music from Flawn Production. (1)
- Club Mix 2: Brilliant house music in one long mix from the Beatmaster. (1)
- D-Mob Music 4: The tradition of great music continues from this cool group. (2)
- Utilis Disk 66: This disk contains 202 utilities, compiled by Pendle Europa! (1)
- All New Star Trek Game: Very good playability, and it's a challenge... (2)
- Home Business Pack: Spreadsheet, wordprocessor & database, with help files. (3)
- JTS Soundtracker Set: Various versions of Soundtracker, plus 4 instruments disks. Great value! (5)

OR WHY NOT BUY 10 OR MORE PD DISKS FOR £1.25 EACH!  
SEND A BLANK DISK OR SAE FOR OUR FREE CATALOGUE

To order: Please make cheques or postal orders payable to **JTS PD** and then send your order to:  
**2 ASHFIELD, WETHERBY, LS22 4TF**  
Telephone: 0937 63834

**THE AMIGA MUSIC MATRIX**  
A disk magazine for the Amiga Musician

Issue One has Sampled Sounds from the Korg M1 in IFF Format and 8 Trak Soundtracker Software.

Issue Two with original sequences and samples for MUSIC X and OKTALYZER. MIDI System Exclusive Dumps for the D10/D20/D110-256 new voices for all these instruments.

Also each issue has tutorials on MIDI, Music and using Amiga Basic for music playing/teaching.

Both issues available now - price £10 each or you may subscribe for four issues for only £35.

New 500 voices for Korg M1 £30.

Phone for further details 0592 714887 or write to:

**THE MUSIC MATRIX(AC)**  
14 MAIN STREET,  
EAST WEMYSS KY1 4RU

Access 

**E<sub>P</sub>D · E<sub>P</sub>D · E<sub>P</sub>D · E<sub>P</sub>D · E<sub>P</sub>D · E<sub>P</sub>D · E<sub>P</sub>D · E<sub>P</sub>D**

**ELECTRA PUBLIC DOMAIN**  
A Fast and Efficient Service

**1 Disk £1.60**

**10 or more Disks £14.00**  
(Postage, Packing & VAT inclusive)

In the event of a query please contact Paul King on

**071 433 3428**

Cheques or postal orders payable to P.J. King,  
Electra Public Domain, 35 Marlborough Mansions,  
Cannon Hill, London NW6 1JS

**Sagittarian PD**

FOR THE AMIGA - 99p PER DISK UNTIL OCTOBER 5  
(50p P&P per order)

SAE FOR FREE PRINTED CATALOGUE - CATALOGUE ON DISK 70p  
DEMOS - UTILITIES - GAMES - LANGUAGES

FISH 23 - Lattice C v3.03 with include files	SAGIUTL 26 - Video Applications (2 Disks)
SAGIDEM 17 - CEBIT '90 Demo, Coma demo, Vectory Demo	SAGIGRA 5 - Agatron slideshow 6
FISH 337 - C Manual	SAGIUTL 29 - TBAG40 (2 Disks)
SAGIDEM 23 - Silents Megademo	SAGIGAM 5 - Our translation of The All
FISH 344 - ROM Kernal reference manual companion	New Star Trek's German instructions
SAGIDEM 20 - Fraxion Horrorshow	*PAB series unavailable elsewhere
SAGIUTL 25 - TV Graphics (2 Disks)	PAB 1 - HAM cartoon style slide show
	PAB 2 - Sampled English speech phonemes
	PAB 3 - Portraits of various people

**SOUND SAMPLING SERVICE AVAILABLE**  
SEND DETAILS OF YOUR REQUIREMENTS  
PLEASE ADDRESS MAIL TO: PAUL BROWN, (AMC1)  
104 WOOD STREET, LONDON E17 3HX. TEL: 081 520 3858  
CHEQUES/P.O.s PAYABLE TO P.A. BROWN

**AMIGA REPAIRS & SPARES**

**SPARES**

8367 Agnus.....£34.00	Rom V1.2.....£32.00
8371 Fat Agnus.....£49.00	Rom V1.3.....£32.00
8372 Fat Agnus.....£62.00	8520 CIA.....£16.00
5719 Gary.....£17.00	5721 Buster.....£16.00
8364 Paula.....£40.00	68000 MPU.....£24.00
A1000 Rom Odd.....£25.00	41256 RAM.....£24.00
A1000 Rom Even.....£25.00	LF347.....£2.50
MSM 6242 Clock.....£12.00	8362 Denise.....£29.00


Many other spares available

**ACCESSORIES**

Batman Pack.....£380.00	A500 Internal Drive.....£70.00
Flight of Fantasy Pack.....£380.00	A2000 Internal Drive.....£70.00
Cumana CAX354 3.5".....£80.00	A500 PSU.....£55.00
External Drive 3.5".....£70.00	Amiga Mouse.....£40.00

Also available, leads, books, MIDI Interfaces, Disks, Digitisers, Genlocks, Hard Drives, Joysticks etc.  
All prices include postage and packing.  
Fast Amiga 500/1000/2000 repairs (free estimate) phone.

**ACE Repairs, Dept AC Outways Farm, Pelynt, Looe, Cornwall PL13 2NW**  
☎ (0503) 20282



**COMPUTER REPAIRS**

**ATARI ST/AMIGA**

Simply send your machine along with a £15 diagnostic fee and you will be sent a written quotation for the cost of repairing your machine.

**STOP PRESS:**  
A500 512 RAM  
upgrade switchable £33

**FIRST AID FOR TECHNOLOGY**

★ TYPICALLY £45, 1 WEEK TURNAROUND ★

**W.T.S. ELECTRONICS LTD, CHAUL END LANE, LUTON, BEDS LU4 8EZ**  
Tel: 0582 491949 (4 LINES). Fax: 0582 505900







## COMPUTERWISE BRIGHTON

### AMIGA SPECIALISTS

WE HAVE 100s OF SOFTWARE TITLES (MANY ARE NOW DISCOUNTED), BOOKS

AND PERIPHERALS IN STOCK AT ALL TIMES.

CALL IN TODAY FOR YOURS

£1000 INSTANT CREDIT AVAILABLE

**0273 674626**



OPEN 10 AM TO 5.30 PM MONDAY TO SATURDAY  
44 GEORGE STREET, KEMPTOWN, BRIGHTON  
OPPOSITE THE AMERICAN EXPRESS BUILDING



FOR

## COMMODORE AMIGA COMPUTERS TALK TO US WEST MIDLANDS AMIGA

We deal only in Commodore Amiga computers and accessories. We give free technical advice with a user friendly approach. So don't hesitate to call.

For a personal appointment (with no obligation) or advice/help call (0905) 794955

Business hours MON-FRI 18.00-21.00 SAT 09.00-21.00  
87 Westbury Avenue, Droitwich, West Midlands WR9 0RT

## CONTROL THE UNIVERSE!

"I'm totally awed by what you have done!...it's beautiful, especially when the lights are off...congratulations..."

**Arthur C. Clarke**

author of *2001: A Space Odyssey*

**Distant Suns** (Commodore Amiga™ only), the award-winning planetarium blockbuster, is now available in the UK in PAL! Endless entertainment and education for all. Ask for it!



*Virtual Reality Laboratories, Inc.*

2341 Ganador Court  
San Luis Obispo, CA 93401 USA

## HAMPSHIRE MICRO COMPUTERS LTD

Unit 11, Kingdom Close, Segensworth East, Hants PO15 5TJ

Tel: 0489 885911 Fax: 0489 885651

Printer prices include Paper & Cable	All prices are exclusive of VAT	Prices Subject to Change
<b>NEW</b>	Amiga Screen Gems Pack: £312.00 Games: Back to the Future 2, Days of Thunder, Shadow of the Beast 2, Nightbreed, D Paint 2	
Amiga Batpack £312	Amiga Flight /Fantasy £312	Amiga Class of 90's £460
Citizen 120D+ £112	Star LC24-10 24 Pin £195	Panasonic KXP1180 £139
Citizen Swift 24 £265	Integrex Colourjet £540	Panasonic KXP1124 £215
Star LC10 Mono £129	H.P. Deskjet Plus £521	Epson LX400 £139
Star LC10 Colour £169	Panasonic KXP1081 £119	Epson LQ400 £215
<b>PRINTER RIBBONS</b>		
Citizen 120D.....£4.00	Star LC10 Sheet feeder £51.30	Swift 24 Colour U/G £31.30
Star LC10 bla .....£4.00	Swift 24 Sheet feeder £60.00	Microbotic 1/2 meg £42.60
Star LC10 col.....£6.00	CBM 501 U/G £60	Pro 5000 Joystick £11.26
Star LC2410 .....£5.00	Philips CM8833 £204	PC Emulator £278.27
Panasonic 1180.....£8.65		
Panasonic 1124.....£8.65		
Deskjet Cart.....£14.05		
Epson LQ 400 .....£8.65		

Visitors are welcome at our showroom MON - FRI 9.00 - 5.30

And on SATURDAY from 9.00 - 1.00. 12 Month Warranty

Securior £7.00 Post £1.00 or £3.00 Larger items



## ALTERNATIVE IMAGE

### HAVE YOUR OWN AMIGA GRAPHICS OR ANIMATIONS OUTPUTTED ONTO 35MM SLIDE FILM OR VIDEOTAPE

#### BUREAU SERVICE

Have your own Amiga graphics outputted onto 35mm slide

All resolutions except overscan and halfbrite - send for disk with safe areas and examples.

Prices inc. VAT & 1st class postage in UK. (Glass mounts 30p extra per slide).	UNMOUNTED PRICE	Please ring to Discuss Requirements
1 .....	£5.00	
2 - 10 .....	£4.00	
11 - 20 .....	£3.00	
20+ .....	£2.00	

#### ANIMATIONS DIRECT ONTO VIDEOTAPE

Also IFF to BVU/SP VIDEOTAPE

Have your animations outputted, via broadcast quality equipment, onto most formats of videotape.

We can run your animation files directly onto tape.

MINIMUM CHARGE - £10 (INCLUDES VAT, POSTAGE, VHS TAPE ONLY)

For the professional approach we can render IFF files frame-by-frame onto tape for true 25 frames per second animation, using specially designed Hardware and Software.

50p PER FRAME (+ VAT, POSTAGE, TAPE)

PLEASE RING TO DISCUSS YOUR REQUIREMENTS MANY EXTRAS ON REQUEST

#### MONEY WITH ORDER

Allow 1 week for processing and delivery  
We accept cheques postal orders made payable to:

ALTERNATIVE IMAGE PRODUCTIONS  
6 LOTHAIR ROAD, AYLESTONE  
LEICESTER LE2 7QB  
(0533) 440041  
FAX (0533) 440650



# The truth about TELEX

**PRICE CUT!**  
Telex charges on  
MicroLink are now  
20% cheaper than  
on Telecom Gold

## How much does it cost to go on Telex?

You could go the conventional way and buy a dedicated Telex machine. The cheapest will cost you £1,604 (the Whisper), the dearest £2,892 (the Cheetah). You will also need a separate telephone line, costing £101 to install, plus £404 a year rental. That's a total outlay over the first year of a minimum of £2,109. (All prices include VAT.)  
Or you could do what more and more Amiga Computing users are doing – use your computer to double as a Telex machine. And just use your ordinary telephone!

## How do I turn my Amiga into a Telex machine?

All you need is a modem and appropriate communications software (see the advertisements in this issue), a telephone, and a subscription to *MicroLink*. Telex is just one of a growing number of services available to Amiga Computing users on *MicroLink*. With *MicroLink* you can also read the news as it happens, go teleshopping, create your own closed user group, send telemessages and electronic mail right round the world, download free programs directly into your micro . . . and much more.

## But why use Telex?

Because it's a standard means of instant communication between businesses. Today there are 150,000 Telex machines in use in Britain – and more than 2 million worldwide. Telex dramatically speed up business communications – it's just as quick as using the phone but far more efficient, because you have a hard copy of every "conversation" for your records.

But there's a big bonus you get when you use *MicroLink* for Telex that the conventional way doesn't offer.

With *MicroLink* you don't HAVE to be in your office to send or receive Telex messages. You can just as easily use your computer at home (or even a portable). So now you can check whether there are any Telex messages waiting for you – anywhere, anytime. How's that for your business efficiency?

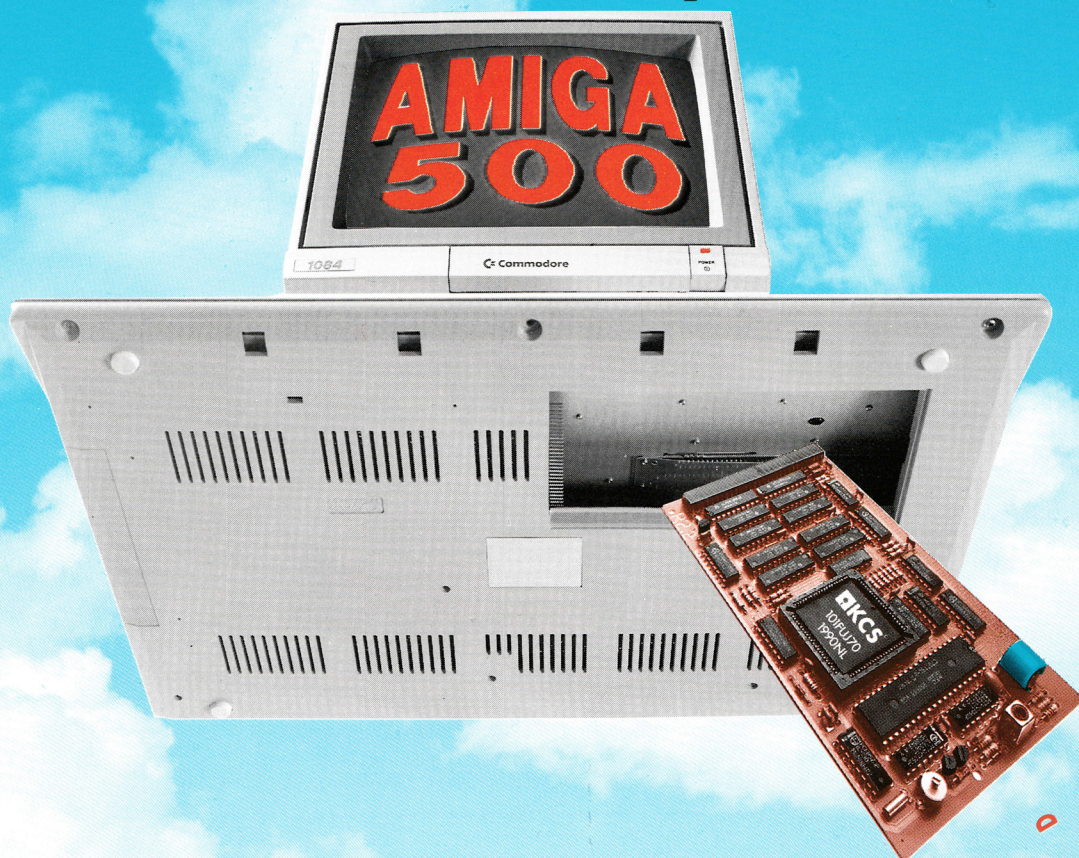
For details:  
Tel: 0527 64295 ext. 2697

# ADVERTISERS' INDEX

17 Bit Software .....	104	Dowling Computers .....	23	P Dom PD Amiga .....	92
A-Z Computer Services .....	18	Electra PD .....	144	Power Computing .....	110-113
Ace Repairs .....	144	Entertainment International .....	2	Proton .....	64
Alternative Image .....	145	European Peripherals .....	43	Rombo .....	49
Applied Research Kernal .....	18	Evesham Micros .....	128-129	Sagittarian PD .....	144
Arnor .....	20	G2 Systems .....	109	School Software .....	143
Ashcom .....	68	Golden Image .....	99	Silica Shop .....	87
Audition Comp Services .....	64	Gordon Harwood .....	14-17	SK Marketing .....	46
Bitcom Devices .....	147	Greater London Computers .....	118-119	Soft Machine .....	25
Bruce Everiss .....	144	Hampshire Micros .....	145	Softsellers .....	85
Calco Software .....	142	Home Based Business .....	98	Softville PD .....	68
Castle Computers .....	72	JTS Public Domain .....	144	Solid State Leisure .....	13
Checkmate Digital .....	40	Kadsoft .....	80	Special Reserve .....	53
Commodore .....	108	Kosmos .....	143	Tam Marketing .....	142
Computer Lab .....	114	LCL .....	143	Track Computer Systems .....	148
Computer Shopper Store .....	26-27	MD Office Supplies .....	58	Trilogic .....	75
Computerwise Brighton .....	145	Media Direct .....	50	Virgin .....	6
Cumana .....	104	Merlin Express .....	56-57	Virtual Reality .....	142
Database Publications .....	132-133	Micro APL .....	109	Voltmace .....	80
Datel .....	34-35	Microdeal .....	79	West Midlands Amiga .....	145
Delta PI Software .....	109	Monumental Music .....	80	Wizard .....	109
Diamond Computers .....	100-103	Music Matrix .....	144	WTS Electronics .....	91, 144
Digicom .....	33	New Dimensions .....	80		
Digita .....	88	Overseas Media .....	3		



# THE AMIGA 500 PC/XT IS HERE



Run Professional  
MS DOS Software  
on your Amiga 500 at  
a price you can afford

## KCS POWER PC BOARD

### Why did you buy an Amiga 500?

Of course, because of its superb graphics, music and animation capabilities. However if you want to get serious, you soon realise that it is distinctly lacking in memory and professional software.

#### Well – they said it could never happen – but it's here at last!

You! In your own home can transform your Amiga 500 into a real IBM compatible with Amiga memory expansion up to one and a half megabytes.

It's simple – no screwdriver, no soldering iron and no technical knowledge required. Just turn your Amiga over, open the cover, slide the Power PC Board into the connector, close the cover and your Amiga PC/XT is ready. (In other words, no loss of guarantee)

You are now ready to use a wealth of professional MS DOS software at speeds faster than a PC/XT (ind. review), **and in colour**, with compatibility thanks to Phoenix-Bios.

You can also rely on the correct date and time at any moment in Amiga and MS DOS mode.

- ★ Available memory: 704KB + 64KB EMS in MS DOS mode, 1 megabyte + 512KB RAM (disk) buffer in Amiga mode
- ★ No extra power supply necessary thanks to the most modern CMOS and ASIC technology
- ★ OK with TV. No special monitor required
- ★ Price: **£320.00 including VAT.**
- ★ **Access and Visa accepted.**
- ★ For export price please contact us
- ★ Trade enquiries welcome (UK – Scandinavia – and all English language.)

*Compatibility is excellent but no-one can guarantee every single program available, therefore if your purchase depends on a particular program, please ask us first or send in a copy of the program. (With suitable S.A.E. if to be returned). Price subject to change without notice.*

- ★ Video support: monochrome, Hercules and Colour Graphics Adaptor (CGA) (4 and 8 colours)
- ★ Disk support: internal 3.5" external 3.5" external 5.25" drive. (Software-upgrade to H/D A590 in pipeline)
- ★ Including MS DOS 4.01, MS DOS shell and GW Basic (market value approx £130.00)
- ★ Including English Microsoft books + KCS manual
- ★ Further exciting software upgrades in the pipeline

# BDL

## BITCON DEVICES LTD.

88 BEWICK ROAD, GATESHEAD,  
TYNE & WEAR, NE8 1RS ENGLAND.

Tel: (091) 4901919/4901975.

Fax: (091) 4901918



# TRACK

## COMPUTER SYSTEMS

**COMPUTER** is our middle name  
is our middle name  
is our middle name

**TRACK COMPUTER SYSTEMS**  
Department AC O/FPB  
Blacksmiths Yard  
Sadler Gate Derby DE1 3PD  
Telephone: (0332) 41817  
FAX No: (0332) 44001

### VISIT OUR SHOP IN DERBY

Pop in and see us, we're always happy to help with your enquiries. Most of our customers come recommended by their friends.

### STD AMIGA A500 FLIGHT OF FANTASY

**Standard Amiga A500...**  
512K RAM, 1Mb Drive,  
4096 Colours, Mouse,  
Multi-Tasking, Built  
in Speech Synthesis,  
Workbench 1.3 System  
Disks, Kickstart 1.3,  
All leads to connect up.

**Plus some really  
GREAT SOFTWARE  
to get you going!**

ESCAPE FROM THE PLANET  
OF THE ROBOT MONSTERS  
RAINBOW ISLAND  
F29 RETALIATOR  
DELUXE PAINT II

**£369.95** INC VAT

Or take advantage of our Credit Facilities\*

### A500 FLIGHT OF FANTASY TRACKPAK

**Standard Amiga A500 Flight  
of Fantasy plus our Trackpak**  
(Amiga A500 F.O.F. as listed above)

*Plus, Trackpak Extras\**

1-Disk Storage Box, 1-Mouse Mat, 1-Joystick,  
1-Dust Cover, Five Super Public Domain Disks,  
5-Blank Disks, Free Membership of the Track  
Owners Club (including Free Utilities Disk  
worth £12 and Special Offers including up to  
20% Discounts on Software)

**£389.95** INC VAT

Or take advantage of our Credit Facilities\*

### 1 Mb. AMIGA A500 FLIGHT OF FANTASY

**Track's Standard Amiga A500  
Flight of Fantasy Pack** (As listed left)

*Plus from Track...*

**0.5Mb RAM UPGRADE to 1Mb  
including a Free 1Mb Game**  
(Title may vary, Phone for details)

*Super Value at only...*

**£399.95** INC VAT

Why not add EXTRAS\* FROM OUR

'TRACKPAK' Add Just £20 to the Price!!!



### 'RE-INK' YOUR TIRED RIBBONS

A unique new ink spray for fabric ribbons.  
Specially developed to put carbon onto your  
faded, grey ribbon & bring it back to life.

Just lift the lid on your  
ribbon and spray! Do it  
again and again to the  
SAME RIBBON! Just  
think of the savings!!!  
(USE EACH CAN UP TO 100 TIMES!)

**£12.95**



### TRACK CLUB MEMBERSHIP

Because Track are well respected Software Developers (see our new BBC Transfer Program)  
and UK Distributors we are able to offer **EXTRA SPECIAL DEALS** to ALL our customers BUT,  
when you join the **TRACK CLUB** you will actually **SAVE EVEN MORE!**  
Membership is **ONLY £10** per annum but as soon as you join you will  
receive a **FREE DISK** including a Football League Program, a great  
collection of unreleased Digi-Fonts, Original Music Scores and More!

Great  
Value  
Only... **£10**  
Per Annum.

### PUBLIC DOMAIN SOFTWARE

Track carry huge stocks of Public Domain Software, from all  
CURRENT PD Libraries, from Demo's to full blown programs...  
**ALL AT ONLY £1.50 per disk!!!** Phone for full list of titles now.

### BOOKS...

**OVER 100 BOOKS for AMIGA ON STOCK!**  
Phone now for full details of titles,  
availability and prices.

### PUBLIC DOMAIN SOFTWARE

**BUSINESS PACK** 5 Disk Set only **£4.95**  
BANK, SPREADSHEET, DATABASE, WORDWRITING +  
AMIGA SPELL + CLERK

**GAMES PACK 1** 5 Disk Set only **£4.95**  
RISK, MONOPOLY, TETRIS, 2 x 10 GREAT GAME  
DISKS...23 GREAT GAMES!

**UTILITIES SET** 5 Disk Set only **£4.95**  
MESSY DOS, POWER PACKER, VIRUS KILLER,  
EUROPA DISK, ARP (Brilliant!) 100's of Utilities!

**MUSIC PROGRAMS** 5 Disk Set only **£4.95**  
GAMES MUSIC CREATOR, SOUNDTRACKER (All Ver-  
sions), OKTALIZER (8 Channels), NOISETRACKER V2  
(Midi Compatible) M. E. D.  
All these programs are Highly Recommended!

**MUSIC SAMPLE FILES** (FOR ABOVE) **99p Ea.**

**EDUCATION 1 to 5** **£4.95**  
THE BEST selling education PD around  
LEARN & PLAY 1-2 for the Under 7's **99p Ea.**

**GRAPHICS** 5 Disk Set only **£4.95**  
MANDELBROT MOUNTAINS, MANDELBROT SHOW,  
GRAPHICS UTILITY DISK, VIDEO APPLICATIONS  
DISKS 1 & 2, Progs for the Graphics Enthusiast

**TOP 5 DEMO's** Updated Daily 5 Disks **£4.95**

**'TOP TEN' DISKS** Featured in this Ad. **£9.00**  
PHONE NOW FOR COMPLETE LISTING!

**ANIMATION SET** 5 Disk Set only **£4.95**  
SOOT, SPACE CHASE (Great!), STEALTHLY 2, STAR  
TREK MANOEUVRES, THE RUN

**GAMES SET 2** 5 Disk Set only **£4.95**  
STAR TREK 1-2, COLOSSAL WORLD ADVENTURE,  
BATTLEFORCE, TENNIS, MORIA

**OLD FAVOURITES** 5 Disk Set only **£4.95**  
PUGGS IN SPACE, SPACE ACE, FLASH DIGI  
CONCERT 3, RED SECTOR MEGA DEMO 1 & 2

**LANGUAGE** 5 Disk Set only **£4.95**  
NORTH C, SOZABON C, PASCAL COMPILER,  
C UTILITY DISK, VC + A68K ASSEMBLER

### AMIGA SOFTWARE AND ACCESSORIES

**SUPERBASE PERSONAL** (rrp £59.95) **£15.00**  
**SUPERBASE II** (rrp £99.95) **£29.95**  
**Package of...SUPERBASE** **£149.95**  
**PROFESSIONAL & SUPERPLAN** (rrp £350)

*New Track BBC Transfer Program...*

**BBC TRANSFER UTILITY** **£19.95**

Real Translation program to get those BBC  
files to your Amiga complete with cable to  
link machines together

**TRACK BBC TRANSFER UTILITY** **£49.95**

**+ BBC EMULATOR SOFTWARE**

**512K MEMORY UPGRADE** *Track Scoop Price* **£44.95**  
*Only...*

**Make your Amiga 1Mb**

**WE STOCK OVER 2000 AMIGA PRODUCTS SO  
IF THERE'S ANYTHING YOU NEED AT A REALLY  
GREAT PRICE JUST PHONE TRACK NOW!!!**

### ORDERING MADE EASY...ORDERING MADE EASY

- Phone our Fast Order Line, using Access, Visa or Lombard Charge Cards or send us a Cheque/Postal Order with your order details.
- \*Credit Terms are available to customers over 18 (subject to status), just phone and we will be pleased to send written details and an application form. Requests for credit are required in advance and are available to UK Mainland residents only. APR 36.8% (Variable)
- Postal delivery and VAT are included in the prices shown, but Next Working Day courier service is available at an additional cost of £7.50/large item (UK Mainland only). All goods despatched same day payment is confirmed, but note cheques need bank clearance before goods can be despatched.
- Track Computers reserve the right to alter specific offers or change prices without prior notice.
- Goods advertised are subject to availability. E&OE.



**MEMBER YOU CAN  
VISIT OUR SHOP  
IN DERBY...**  
OPEN Mon. to Sat.  
9am til 6pm  
Thurs. til 9.30pm

**033241817**





# AMERICAN COMPUTING

## November 1990

### Vol. 3 No. 6